SUPREME COURT OF THE UNITED STATES

October Term, 1941

No. [redacted]

SAMUEL HUNTER WOODBRIDGE AND EDWARD WOODBRIDGE BATEMAN, EXECUTORS OF WILLIAM E. WOODBRIDGE, DECEASED, APPELLANTS

vs.

THE UNITED STATES

APPEAL FROM THE COURT OF CLAIMS

Filed [redacted], 1941

(See [redacted])

(28,968)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1922.

No. 418.

SAMUEL HOMER WOODBRIDGE AND EDWARD WOODBRIDGE BARNES, EXECUTORS OF WILLIAM E. WOODBRIDGE, DECEASED, APPELLANTS,

vs.

THE UNITED STATES.

APPEAL FROM THE COURT OF CLAIMS.

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1 **Court of Claims.**

No. 22504.

SAMUEL HOMER WOODBRIDGE and EDWARD WOODBRIDGE BARNES, Executors of William E. Woodbridge, Deceased,

vs.

THE UNITED STATES.

I. History of Proceedings.

The original petition in this case, which was brought in the name of William E. Woodbridge, was filed in this office on March 7, 1901 by R. R. McMahon, Esq. as attorney of record.

On November 22, 1904, Samuel Homer Woodbridge and Edward Woodbridge Barnes, Executors of William E. Woodbridge, deceased, were substituted as claimants, on motion made therefor suggesting the death of William E. Woodbridge.

On january 26, 1910, by leave of court, the said executors filed an amended petition. Said amended petition is as follows:

2 **II. Amended Petition.**

(Filed Jan. 26, 1910.)

To the Honorable the Court of Claims:

Your petitioners, Samuel Homer Woodbridge, a citizen of Boston, in the State of Massachusetts, and Edward Woodbridge Barnes, a citizen of Perth Amboy, in the State of New Jersey, the duly appointed executors of William E. Woodbridge, deceased, respectfully represent:

1. That, as shown by the original petition of your petitioners' decedent, filed March 7, 1901, this action has been brought by authority of the following Act of Congress:

"An act referring to the Court of Claims the claim of William E. Woodbridge for compensation for the use by the United States of his invention relating to projectiles, for which letters patent were ordered to issue to him March twenty-fifth, eighteen hundred and fifty-two.

"Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, that the claim of William E. Woodbridge for compensation for the use of his alleged invention relating to projectiles for rifled cannon, for which letters patent were ordered to issue March twenty-fifth, eighteen hundred and fifty-two, by the United States Government, be, and the
3 same is hereby referred to the Court of Claims of the United States, which court is hereby vested with jurisdiction in the

premises, and whose duty it shall be to hear and determine, according to its usual rules of procedure—

"First. Whether the said Woodbridge was the original and first inventor of the said invention and entitled to a patent therefor.

"Second. To what extent the said invention has been used by the United States Government, and what amount of compensation, if any, the said Woodbridge ought to receive, in equity and justice, from the United States Government for the past use of said invention. And in considering and determining the compensation to be made, if any, the said court shall, if it find that the said Woodbridge was the first and original inventor of said invention and entitled to a patent at the time of its order to issue, namely, March twenty-fifth, eighteen hundred and fifty-two, proceed and be guided in all respects as though the aforesaid letters patent had been actually issued for the term of seventeen years from the date of the aforesaid order to issue; the court to render judgment, irrespective of lapse of time, in favor of the claimant with the same effect, including right of appeal, as judgments generally of said court: Provided, however, That the said court shall first be satisfied that the said Woodbridge did not forfeit, or abandon, his right to a patent, by publication delay, laches, or otherwise; and that the said patent was wrongfully refused to be issued by the Patent Office."

"Approved March 2, 1901."

2. That prior to the 11th day of February, 1852, the decedent, William E. Woodbridge, a citizen of the United States, and a resident of Perth Amboy, in the State of New Jersey, was, as your petitioners are informed and believe, and therefore allege, the original and sole inventor of a certain new and useful improvement in rifled ordnance not known or used by others in this country before his discovery or invention thereof, and not, at the time of his application for a patent, in public use or one sale with his consent or allowance as the inventor or discoverer, and not patented or described in any printed publication in this or any foreign country prior to his invention thereof.

3. That thereupon, on the 11th day of February, 1852, the said decedent, William E. Woodbridge, duly and regularly filed in the Patent Office of the United States an application for the issu-
4 ance to him of letters patent for the said new and useful improvement in rifled ordnance, which said application comprised a petition for the issue of said letters patent, and a written description of his invention or discovery, together with drawings illustrating the invention, a model representing said invention, the prescribed oath, and the fee required by the Act of Congress in that case made and provided.

4. After proceedings duly and regularly had been taken upon said application, a patent was allowed and ordered to be issued on the 25th day of March, 1852, of which action the applicant was informed by the following communication from the Commissioner of Patents:

"U. S. Patent Office, April 15th, 1852.

"SIR: Your favor of the 13th inst. is received. Your application for Letters Patent for Rifled Ordnance has been examined and on

the 25th ult. a patent was ordered to issue thereon; and in accordance with your request the papers were filed among the secret archives of the office, subject to your directions as to the time of issuing the same. Yours respectfully, Thos. Ewbank. W. E. Woodbridge, Perth Amboy, N. J."

5. The applicant's request of April 13, 1852, referred to by the Commissioner was, that in accordance with the custom of the Patent Office then prevailing, the patent should be placed in the secret archives of the office, adding that if it was necessary to specify a particular time during which the patent might remain in the secret archives, one year should be designated as the time specified by applicant. Prior to his letter of April 13, 1852, the applicant under date of March 23, 1852, had thus written to the Commissioner of Patents:

"I was informed, in answer to my inquiry, that upon the issue, or order to issue, of a patent, it may be filed in the secret archives of your office (at the risk of the patentee) for such time as he may desire. I wish to avail myself of this privilege when my patent may issue, in order that my ability to take out a patent in a foreign country may not be affected by the publication of the invention. If it is necessary to specify a particular time during which the patent shall remain in the secret archives, you will please consider one year as the time designated by me. Very respectfully, W. E. Woodbridge."

6. The decedent, desiring to prevent the anticipation of a foreign patent by the issue of the United States patent, and desiring to avoid the waste of the life of his patent before the adoption of the invention, and not being under any obligation, legal or otherwise, to call for his patent, permitted the same to remain in the custody of the Patent Office until December 31, 1861.

7. December 31, 1861, decedent addressed a communication to the Commissioner of Patents, stating that he wished, if compatible with the rules of the Patent Office, to make certain amendments to his specifications; but if not permissible, he desired an immediate issuance of his patent. The letter of Woodbridge is as follows:

"Little Falls, N. Y., Dec. 31st, 1861.

"To the Hon. Commissioner of Patents:

"SIR: In the year 1850 I put in use at Fort Monroe an invention for giving the 'rifled motion' to cannon projectiles, and in March, 1852, made application for a patent.

"After making some modifications of the claims (and possibly of the specification, I am not certain), at the suggestion of the office, the application was granted, the patent 'ordered to issue' and filed in the secret archives of the office. I have allowed it to remain until the present time, it being only lately that any immediate opportunity of rendering it pecuniarily available has occurred.

"The principal idea of the invention was the application of an extensible ring of metal to a tapering part of a projectile in the rear of its greatest diameter, so that the ring might be made to enlarge

its diameter by stretching under the action of the powder, at the same time clasping the ball, filling the bore of the gun and taking hold of the grooves. The specification as it is makes no special invention, I believe, of using the ring described without projections in a rifled gun (which was not supposed to be most advantageous in cannon), but it specially states that I proposed to use such a ring in smooth-bored guns where its office was to save loss of force
6 of the powder and give the ball its motion in the direct line of the axis of the bore (that is, avoiding the bounding of the shot from side to side in the gun, which of course interferes with its accuracy of firing). The first claim, according to a hastily drawn copy made by me is in these words: 'I claim first the construction of an extensible ring or sabot as above described to be placed on (or "in") the rear of the projectile for the purpose of diminishing the windage and giving the ball its motion in the axis of the bore.'

"It was supposed that this claim would include every case in which the ring performed the offices then mentioned (as it seems now that it ought); but in order that the idea may be more fully embodied in the claim, I desire to have it modified by the addition of the words 'whether the hinder part of the ring be grooved or not, and without regard to the form of the bore.'

"I may here mention that I first used the ring without the groove spoken of—which is considered desirable rather than necessary—and that I also used, in an ordinary rifle, the ring without the projections to fit the grooves.

"It was also a part of the original invention (as may be found by reference to the report of the experiments made with my rifled gun at Fort Monroe in 1850, on file at the Ordnance Department), to attach the ring to the shot or shell by casting it upon it, having the grooves made in the shell in such a way as to attach to the ring and prevent its rotation on the shell, while still it was allowed to be driven forward upon it by the action of the powder.

"I am fully of opinion that all I have described originated in my invention, and desire to amend the specification so as to include the whole.

"Whether I may do this or not is, I suppose, a matter of discretion with yourself. Please advise me what may be done in this case. Very respectfully, your ob't svt., W. E. Woodbridge.

"P. S.—Should you be unable to grant either of the emendations desired, please issue the patent immediately. Your ob't svt., W. E. Woodbridge."

8. In answer to said letter, the Commissioner informed decedent that in accordance with his request, his patent would be
7 ordered to issue. This information was conveyed in the following letter:

"U. S. Patent Office,
"Washington, Jany. 4th, 1862.

SIR: In reply to your communication of the 31st ult., I have to say your patent will be ordered to issue in pursuance of your request. The defects in your specification can only be cured by a reissue, as you will see by the accompanying Rules. Respectfully, Your obdnt.

Servt., D. P. Holloway, Commissioner. W. E. Woodbridge, Esq., Little Falls, New York."

9. From the date of Commissioner Ewbank's letter of April 15, 1852, to William E. Woodbridge, informing him that a patent had been ordered to issue on his application, up to December 31, 1861, the time Woodbridge applied for delivery of his patent, said Woodbridge had not received any communication from the Patent Office or from any other source in relation to the delivery of his patent.

10. Subsequent to the letter of Commissioner Holloway, dated January 4, 1862, informing Woodbridge that his patent would be issued in accordance with his request of December 31, 1861, Woodbridge received from the Patent Office a communication dated January 29, 1862, notifying him that his request for the issue of his patent was denied on the ground of abandonment of his application for a patent. This said communication purported to be an answer to Woodbridge's letter of December 31, 1861, making no reference whatever to the Commissioner's action, as conveyed in his letter of January 4, 1862, granting Woodbridge's request for the issue of his patent.

11. Upon the receipt of said communication of January 29, 1862, Woodbridge acknowledged the receipt thereof, as well as the receipt of the prior letter of January 4, 1862, and filed his protest against the action set forth in the letter of January 29, and renewed
8 his request for the delivery of his patent which had been ordered to issue by Commissioner Ewbank.

12. April 16, 1862, he again protested to the Commissioner against the jurisdiction taken by the office January 29, 1862, in reviewing the action of the previous Commissioner in ordering his patent to issue, and at the same time, in compliance with the line of appeal imposed upon him by the Patent Office, he filed his appeal with the board of examiners-in-chief.

13. Woodbridge's appeal and protests were unavailing, and the issue of the patent was again refused in the following communication from the Patent Office:

"United States Patent Office.

"July 15, 1862.

"SIR: Your application for a patent for improvement in projectiles has been considered by the examiners in chief upon appeal, and they affirm the former action of the office, and decide that the application should be refused. Respectfully, &c., —— ——, Commissioner of Patents. G. H. C. No. 1. W. E. Woodbridge, Perth Amboy, Middlesex Co., N. J."

14. Thereafter your petitioners' decedent consulted with successive Commissioners of Patents with a view of having the order to issue his patent reinstated, and ascertained that they would not disturb the previous action of the office withholding the patent.

15. Subsequently, to-wit, in the years 1871 and 1879, the decedent made further endeavors to have the Patent Office enforce Commissioner Ewbank's order of March 25, 1852, and the action of Commissioner Holloway as communicated to decedent in said Commis-

sioner's letter of January 4, 1862, and was informed that the action of the office in refusing to issue the patent would not be disturbed.

16. Failing to secure favorable action at the Patent Office, the decedent appealed to Congress in 1884, and after many favor-
9 able and unanimous reports by committees, Congress passed the Act hereinbefore set forth.

17. During the periods from March 25, 1852, to March 25, 1869, the United States made, used, or caused to be made or used, various projectiles for ordnance containing and embodying the invention of Woodbridge as set forth in his application on which a patent was ordered to issue, or material and substantial parts of said invention. The said projectiles were commonly known under and by the following names or designation: Sawyer, Hotchkiss, Cochran, James, Parrott, Stafford, Absterdam, Dyer, Eureka, Dana and Dahlgren.

Your petitioners further show that decedent was entitled to the amounts representing the advantage which accrued to the United States by reason of the use of said decedent's invention of the projectiles named, viz:

Army Projectiles.

Name.	Number.	Weight.	Cost.
Sawyer	25,630	482,660	$82,255.50
Hotchkiss	965,825	10,110,729	1,374,415.45
James	94,046	3,808,789	390,524.92
Parrott	1,248,736	36,305,712	3,057,464.40
Stafford	100	1,300	160.00
Absterdam	60,766	931,904	143,737.00
Dyer	148,035	3,658,366	239,083.39
Eureka	5,000	47,000	7,850.00
Dana	70	12,600	1,140.15
Total	2,448,208	55,359,160	$5,296,630.81

Navy Projectiles.

Name.	Number.	Weight.	Estimate cost.
Sawyer	732	14,580	$2,587.72
Cochran	100	1,100	325.00
Stafford	2,600	124,850	11,317.60
Hotchkiss	61,168	1,146,538	79,253.78
Parrott	270,697	13,891,922	1,039,937.43
Dahlgren	56,256	1,285,363	165,926.56
Total	391,553	16,463,353	1,299,348.09

10 19. Your petitioners state that in the foregoing table of Navy projectiles they are unable to give the exact cost of the projectiles therein enumerated, request therefor having been duly made of the Navy Department, and the Department having reported to the court its inability to furnish said information; and your petitioners further state that said estimated cost is, to the best of their

knowledge and belief, a fair and approximately correct estimate of said cost and is based on the number of projectiles having metallic expanding bands purchased by the Navy Department between March 25, 1852, and March 25, 1869, as set forth in the Navy Department report of February 8, 1882, and on the estimated cost per projectile as determined from the average price per projectile for similar projectiles of corresponding weights by the War Department during said period, said average price per projectile being derived from the report of the War Department dated September 8, 1906, containing a list of the kind, number and cost of projectiles purchased by the War Department, and your petitioners set forth below the estimated price paid for the Navy projectiles and the basis for such estimate:

Kind.	Est. price per proj.	Basis for estimate.
Sawyer 12 pdr.....	$3.25	Price per Army Sawyer 12 pdr. projectile.
Sawyer 30 pdr.....	$2.04	Price per Army Parrott 30 pdr. projectile.
Sawyer 50 pdr.....	$5.26	Price per Army Sawyer 50 pdr. case projectile.
Cochran 12 pdr....	$3.25	Price per Army Sawyer 12 pdr. projectile.
Stafford 30 pdr....	$2.04	Price per Army Parrott 30 pdr. projectile.
Stafford 50 pdr....	$5.26	Price per Army Sawyer 50 pdr. case projectile.
Stafford 100 pdr...	$6.36	Price per Army Parrott 100 pdr. projectile.
11		
Stafford 150 pdr...	$10.80	¾ of price per Army Parrott 200 pdr. projectile.
Hotchkiss 12 pdr...	$2.96	Average of price per Army James 12 pdr. shell and Army Sawyer 12 pdr. shell.
Hotchkiss 20 pdr..	$1.26	Price per Army Parrott 20 pdr. shell.
Hotchkiss 30 pdr..	$2.04	Price par Army Parrott 30 pdr. shell.
Hotchkiss 50 pdr..	$5.26	Price per Army Sawyer 50 pdr. case projectile.
Parrott 10 pdr.....	$.74	Price per Army Parrott 20 pdr. shell.
Parrott 20 pdr.....	$1.26	Price per Army Parrott 30 pdr. shell.
Parrott 30 pdr.....	$2.04	Price per Army Parrott 30 pdr. shell.
Parrott 100 pdr....	$6.36	Price per Army Parrott 100 pdr. shell.
Parrott 150 pdr....	$9.24	¾ of price paid for Army Parrott 200 pdr.
Dahlgren 12 pdr...	$2.96	Estimate price for Hotchkiss 12 pdr.
Dahlgren 20 pdr...	$1.26	Price per Army Parrott 20 pdr. shell.
Dahlgren 30 pdr...	$2.04	Price per Army Parrott 30 pdr.
Dahlgren 50 pdr...	$5.26	Price per Army Sawyer 50 pdr. case shot.
Dahlgren 80 pdr...	$5.09	8/10 of price per Army Parrott 100 pdr. shell.

20. Your petitioners state that the decedent's invention was the first successful and practical invention for giving the rifle motion to projectiles for ordnance and for closing the bore of the gun
12 against windage; that it was of very great value to the Government; that its use as embodied in the various projectiles above enumerated was a necessary and indispensable factor in the successful prosecution of the civil war; and therefore your petitioners believe and allege that the value of said invention to the United States Government was at least thirty-three and one-third per cent (33 1-3%) of the price paid for the above-named projectiles. Wherefore your petitioners claim that in equity and justice they should receive as compensation an amount equal to said percentage.

21. Your petitioners further represent that no action upon this claim has been had either in Congress or before any of the departments, other than as above set forth; that no assignment or transfer of said claim or of any part thereof or interest therein has been made; that petitioners are justly entitled to the amount herein claimed from the United States after allowing all just credits and offsets; that petitioners and their decedent, being citizens of the United States, have at all times borne true allegiance to the Government of the United States and have not in any way voluntarily aided, abetted, or given encouragement to rebellion against the said Government; that a duly authenticated copy of their appointment as executors of William E. Woodbridge, deceased, was filed in this court November 22, 1904, when they were admitted to prosecute this suit; that they believe the facts set forth in this petition to be true.

Wherefore your petitioners pray the Court that a judgment be rendered in their favor for the sum of two million one hundred and ninety-eight thousand six hundred and fifty-nine dollars and sixty-three cents ($2,198,659.63). Samuel Homer Woodbridge, Edward Woodbridge Barnes, Executors of William E. Woodbridge, Deceased, Petitioners. Richd. R. McMahon, Attorney of Record. H. P. Doolittle, Chas. J. Faulkner, Herbert & Micou, Henry B. F. MacFarland, of Counsel.

13 STATE OF MASSACHUSETTS,
County of Suffolk, ss:

Before me a Notary Public in and for the County of Suffolk aforesaid, personally came Samuel Homer Woodbridge, who, being duly sworn, says that he has fully read the foregoing petition by him subscribed and knows the contents thereof and that the facts therein stated upon his personal knowledge are true, and those stated upon information and belief he believes to be true.

Sworn to and subscribed before me this tenth day of January, 1910. Walter Humphreys, Notary Public. [Seal.]

STATE OF NEW YORK,
County of New York, ss:

Before me a Notary Public in and for the County of New York aforesaid, personally came Edward Woodbridge Barnes, who, being duly sworn, says that he has fully read the foregoing petition by him subscribed and knows the contents thereof and that the facts therein stated upon his personal knowledge are true, and those stated upon information and belief he believes to be true.

Sworn to and subscribed before me, this twenty-fourth day of January, 1910. Robert Westaway, Notary Public Kings County. [Seal.] Certificate filed New York County.

14 **III. History of Further Proceedings.**

On January 11, 1917, on motion made therefor, H. P. Doolittle, Esq. was substituted as attorney of record by the court "without prejudice to any lien or interest of the former attorney."

On April 9 and 10, 1918, the case was argued and submitted by Messrs. H. P. Doolittle and R. R. McMahon, for the claimants, and by Mr. W. D. Eakin, for the defendant.

On December 8, 1918, the court filed tentative findings of fact and allowed both sides ninety (90) days in which to file objections thereto.

On March 1, 1919, the claimants filed exceptions to said tentative findings, and on the same date the defendant likewise filed a motion for amendment of said findings.

IV. Argument and Submission of Case on Tentative Findings.

On December 18, 1919, this case was argued and submitted on tentative findings by Mr. Henry P. Doolittle, for the claimants, and by Mr. W. D. Eakim, for the defendant.

15 **V. Findings of Fact, Conclusion of Law, and Opinion of the Court by Booth, J.**

Entered March 22, 1920.

This case having been heard by the Court of Claims, the court, upon the evidence, makes the following

Findings of Fact.

I.

On or about February 11, 1852, the plaintiffs' decedent, William E. Woodbridge, filed in the United States Patent Office an application for letters patent for an improvement in rifled ordnance, said application being accompanied by the fee required by law for the granting of a patent.

The specification of said application was as follows:

"To all whom it may concern:

"Be it known that I, William E. Woodbridge, of the city of Perth Amboy, county of Middlesex, and State of New Jersey, have invented a new and useful improvement in rifled ordnance, and that the following is a full and exact description of the same, reference being had to the accompanying drawings:

"The nature of my invention consists in applying to a projectile to be fired from a rifled gun a rifle-ring, or sabot, in the manner hereinafter described, for the purpose of giving to the projectile the rifle motion.

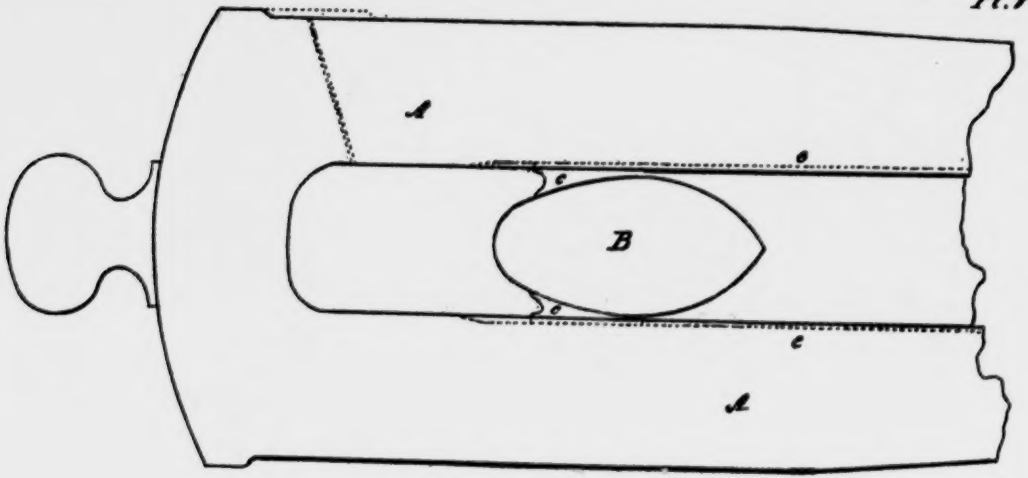
"In the accompanying drawings, fig. 1st represents a section of the cannon through its axis, with the ball and rifle ring, or sabot, in position; A being the cannon, B the ball, and c the rifle ring, or sabot. The dotted line *d* represents the position of the trunnions.

"The cannon, which is represented in transverse section at fig. 2, has a rifled bore, the grooves being represented at *e, e*. The dotted lines *ee*, fig. 1st, also indicate the depth of the grooves. The projectile, which is ovoid in form, pointed at the forward end, is represented at B, fig. 1st, and at fig. 3d (enlarged). The rifle
16 ring, or sabot, is represented separately (enlarged) at fig. 4, a section through its axis; at fig. 5, a view of the forward end, and at fig. 6, a view of the rear end. It is a ring of metal, softer than the ball or cannon, and capable of extension without rupture, whose exterior surface has the form of the bore, but sufficiently smaller to allow it to be readily introduced into the gun; and the inner surface of which fits the surface of the ball in the rear of its greatest diameter. Its rear end is grooved, as shown in the section (fig. 4), in order that the thin portions may act valvularly to prevent the escape of the gases between it and the sides of the bore and projectile.

"A suitable charge of powder is to be introduced into the gun, and the ball and rifle ring placed in the position represented in fig. 1, the rear of the ball being in contact with the charge of powder. The surface of the rifle ring exposed to the action of the gases formed by the inflammation of the powder being much greater, in proportion to its inertia, than that of the ball, the ring is driven forcibly forward upon the ball so as to embrace it tightly, and thus impart the rifle motion which itself has received from the grooves of the gun; and at the same time it is stretched to fill the bore of the gun completely, thus destroying the windage and causing the ball to advance strictly in the line of the axis of the bore. The length of the rifle ring (its measurment in the direction of its axis), in proportion to its diameter, depends upon the stiffness of the metal of which it is formed, the form and weight of the projectile, and the proportionate charge of powder. The proportions represented in the drawings may be considered proper for a rifle ring made of an alloy of 2 parts zinc and 1 part tin, and a charge of powder equal to one-eighth or one-fifth the ball in weight.

"I also propose to use a similar ring or sabot (but without the

Pl. 1



Section of Gun through Axis.

A. Gun. B. Projectile. c. Sabot.

17

Pl. 2.

Fig. 2.

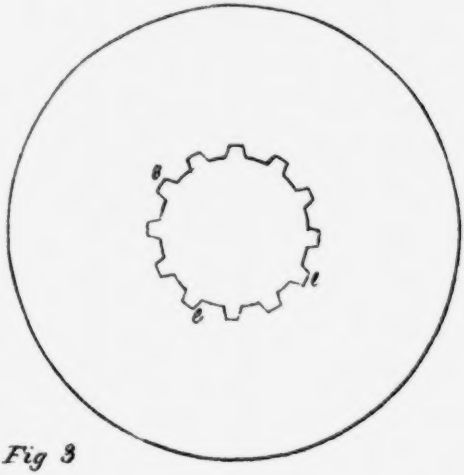


Fig 3

Fig 4

Fig 5

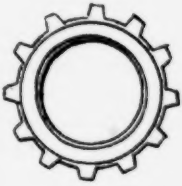


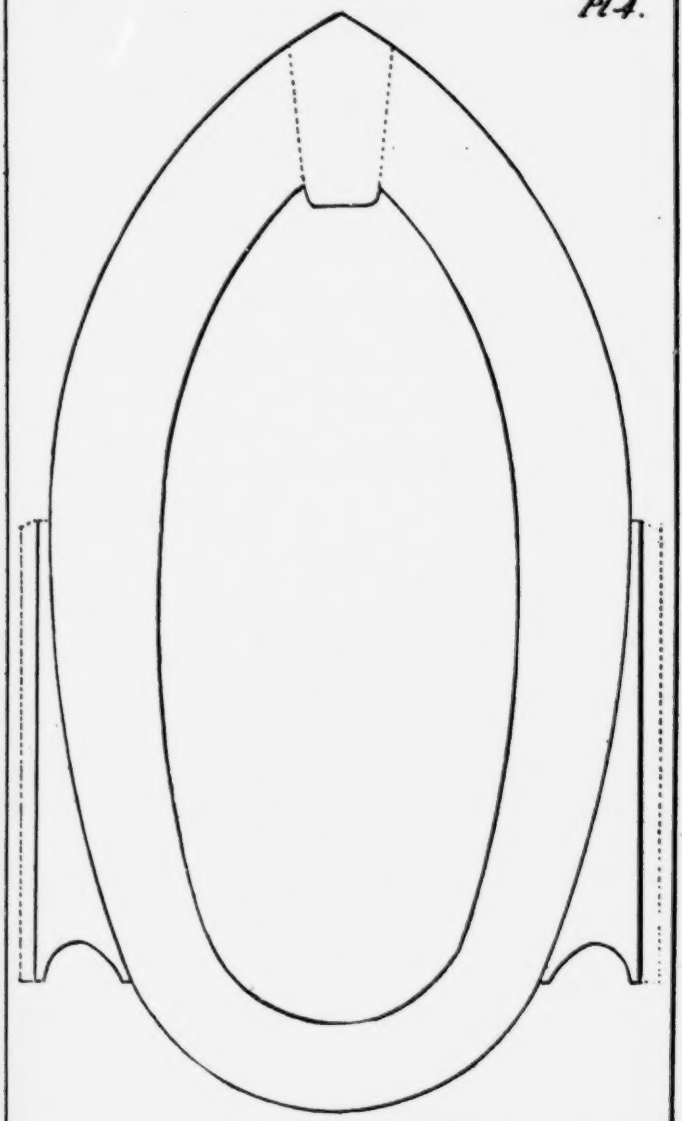
Fig. 2. Transverse Section of Gun

Fig. 3. Projectile

Fig. 4. Section of Sabot

Fig. 5. End view of Sabot

Pl 4.



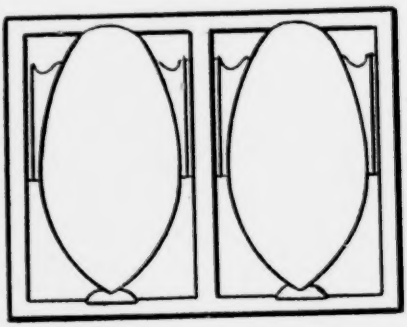
Shell with Sabot for 6 pd. calibre.

Pl. 3.

Fig. 6.

Sabot after firing.

Fig. 7.



Shells boxed for transportation.

projections for the grooves of the gun) for spherical or other shot in smooth-bore guns, for avoiding the loss of force by windage, and for giving the ball its motion in the direction of the axis of the bore of the gun.

"What I claim as my invention and desire to secure by letters patent is the application for rifle ring or sabot, constructed substantially as herein described, to the rear of a projectile for the purpose of communicating to it the rifle motion, without restricting myself to the particular proportions or material mentioned in the description.

"I also claim the use of a similar ring of extensible metal in smooth-bored guns, as set forth in the foregoing specification."

Said specification was illustrated by a set of drawings filed therewith, a perfect copy of which is not now obtainable, but of which the following drawings are a substantial copy:

(Here follow plates 1, 2, 4, 3, marked pages 17, 18, 19, 20.)

21 On February 16, 1852, the Patent Office wrote the applicant, Woodbridge, as follows:

"Your claims to letters patent for alleged improve'ts in rifle balls have been examined and are found to present nothing new or patentable. Sabots or rings of soft metal applied to iron balls are well known for either smoothbore or rifled guns. See page 189, Artizan for 1846, where the shot is of cast iron, and a wooden or leaden ring is made to take into the grooves of the rifle bore. See also a rejected appli'n for a similar invention filed by Francis Mayer in 1851. For letters of withdrawal see enclosed circular."

On February 23, 1852, Woodbridge replied by letter to the Commissioner of Patents, as follows:

"Your letter of the 16th inst., stating that my 'claims to letters patent for alleged improvements in rifle balls have been examined and found to present nothing new or patentable,' came duly to hand. In that communication you refer to the Artizan and to the rejected application of Francis Mayer in 1851. Though anxious to lose no time, I was unable to refer to the Artizan until last Saturday; and have supposed it unnecessary to consider the latter reference, as it bears later date than my experiments at Fort Monroe, the records of which I suppose are sufficient to show my priority of invention should there be an interference. If, however, your judgment should require a consideration of that application, I would thank you, sir, to forward me on such terms as the law prescribes, and as early as convenient, so much of its description as may be necessary for me to be acquainted with.

"I have given the article referred to in the Artizan careful attention; but find nothing in the descriptions of shot there presented which I have intended to claim as my invention. The shot represented at fig. 2 is the only one of those there figured which can by possibility be considered as having analogy to what I have described in my specification, being the only one in which there is a ring wad

or anything approaching thereto, and the concluding sentence of the paragraph, referred the 'sugar-loaf' shot of the Messrs. Lancaster, contains the only mention of a leaden ring.

"I beg your careful attention to the following points as the distinguishing characteristics of the rifle ring or sabot which I have claimed as my invention.

"1st. It is necessarily a ring capable of extension without rupture.

"2d. It grasps the ball, not in consequence of being attached thereto before its insertion into the gun, but by being driven forcibly forward upon an enlarged part of the projectile, by the explosion of the powder within the gun, the practical value of which arrangement is that the ring fully retains its grasp on the ball, though the ball does not fully take the rifle motion at the first instant of its progression. Experiments have fully shown that leaden bands can not be made to give the rifle motion to balls of any considerable weight, however strongly attached.

"3d. As a necessary result of the stretching of the ring, as above spoken of, it is expanded so as completely to fill the bore of the gun, giving greater accuracy to the coincidence of the motion of the ball with the axis of the bore than would otherwise be obtained.

22 "4th. The valvular portions are important parts of the rifle ring. If the gases are allowed to enter the space between the ring and the ball, the ring is not pressed against the ball so as to grasp it as required, or stretch it against the sides of the bore; if the gases escape between the rifle ring and the sides of the bore, the ring is rapidly abraded by the current of heated gases.

"None of these characteristics are indicated, as I am aware, in the article referred to, and it was my intention to claim nothing else in my specification.

"May I further request that you would favor me with a copy of the patent laws now in force?"

On March 19, 1852, the Patent Office wrote Woodbridge as follows:

"Your letter of 23d ult. and the arguments which it contains have been considered in their turn, and the specifi'n is herewith returned for amendment. It is believed that claims substantially similar to those set forth in pencil illustrate your invention, and that if they be presented they may be allowed.

"The drawing is also returned; a duplicate will be required. The patent laws which you desire are herewith returned, together with a circular of 'information' for persons having business with this office.

[*Penciled Memorandum Referred to in Above Letter of March 19, 1852.*]

"What I claim as my invention and desire to secure by letters is—

"1st. The construction of an extensible metallic ring or sabot as above described and placed in the rear of the projectile, for the purpose of—and gives the ball its motion in the direction of the axis —bore.

"2d. A metallic ring similarly formed and placed and furnished with projections as described in combination with a rifle-bored gun, for the purpose of communicating the rifle motion to the — as — set forth."

On March 23, 1852, Woodbridge wrote the Commissioner of Patents as follows, the amendment of the specification being accompanied by the required supplemental oath:

"I return herewith my specification, amended, as I suppose, according to your desire, and also the necessary duplicate drawings.

I was informed, in answer to my inquiry, that upon the issue, or order to issue, of a patent, it may be filed in the secret archives of your office (at the risk of the patentee) for such time as he may desire. I wish to avail myself of this privilege when my patent may issue, in order that my ability to take out a patent in a foreign country may not be affected by the publication of the invention. If it is necessary to specify a particular time during which the patent shall remain in the secret archives, you will please consider one year as the time designated by me.

[*Amended Final Page of Application, Referred to in Preceding Letter.*]

bore. The length of the rifle-ring (its measurement in the direction of its axis), in proportion to its diameter, depends upon the stiffness of the metal of which it is formed, the form and weight of the projectile, and the proportionate charge of powder. The proportions represented in the drawings may be considered proper for a rifle ring made of an alloy of 2 parts zinc and 1 part tin and a charge of powder equal to one-eighth or one-fifth the ball in weight.

23 "I also propose to use a similar ring or sabot (but without the projections for the grooves of the gun) for spherical or other shot in smooth-bored guns, for avoiding the loss of force by windage, and for giving the ball its motion in the direction of the axis of the bore of the gun.

"What I claim as my invention and desire to secure by letters patent is—

"First. The construction of an extensible metallic ring or sabot as above described and placed in the rear of the projectile, for the purpose of diminishing the windage and giving the ball its motion in the direction of the axis of the bore; and,

"Second. A metallic ring similarly formed and placed, and furnished with projections as described, in combination with a rifle-bored gun, for the purpose of communicating the rifle motion in manner substantially as herein set forth."

On April 15, 1852, the Patent Office wrote Woodbridge as follows:

"Your favor of the 13th inst. is received. Your application for letters patent for rifle ordnance has been examined and on the 25th ult. a patent was ordered to issue thereon, and in accordance with your request, the papers were filed among the secret archives of the office, subject to your directions as to the time of issuing the same."

Said papers were filed among the secret archives of the Patent Office by the Patent Office authorities, as stated by said letter.

III.

No further action was taken either by said Woodbridge or by the Patent Office in the matter of said application for patent until December 31, 1861, upon which date Woodbridge wrote the Commissioner of Patents as follows:

"In the year 1850 I put in use at Fort Monroe an invention for giving the 'rifle motion' to cannon projectiles, and in March, 1852, made application for a patent.

"After making some modifications of the claims (and possibly of the specifications, I am not certain), at the suggestion of the office, the application was granted, the patent 'order to issue' and filed in the secret archives of the office. I have allowed it to remain until the present time, it being only lately that any immediate opportunity of rendering it pecuniarily available has occurred.

"The principal idea of the invention was the application of an extensible ring of metal to a tapering part of a projectile in the rear of its greatest diameter, so that the ring might be made to enlarge its diameter by stretching under the action of the powder, at the same time clasping the ball, filling the bore of the gun and taking hold of the grooves. The specification as it is makes no special invention, I believe, of using the ring described without projections in a rifled gun (which was not supposed to be most advantageous in cannon), but it specially states that I proposed to use such a ring in smooth-bored guns where its office was to save loss of force of the powder and give the ball its motion in the direct line of the axis of the bore (that is, avoiding the bounding of the shot from side to side in the gun, which of course interferes with its accuracy of firing). The first claim, according to a hastily drawn copy made by me in these words: 'I claim first the construction of an extensible
24 ring or sabot as above described to be placed on (or "in") the rear of the projectile for the purpose of diminishing the windage and giving the ball its motion in the axis of the bore.'

"It was supposed that this claim would include every case in which the ring performed the offices then mentioned (as it seems now that it ought); but in order that the idea may be more fully embodied in the claim, I desire to have it modified by the addition of the words 'whether the hinder part of the ring be grooved or not, and without regard to the form of the bore.'

"I may here mention that I first used the ring without the groove spoken of—which is considered desirable rather than necessary—and that I also used, in an ordinary rifle, the ring without the projections to fit the grooves.

"It was also a part of the original invention (as may be found by reference to the report of the experiments made with my rifled gun at Fort Monroe in 1850, on file at the Ordnance Department), to attach the ring to the shot or shell by casting it upon it, having grooves made in the shell in such a way as to attach the ring and prevent its rotation on the shell, while still it was allowed to be driven forward upon it by the action of the powder.

"I am fully of opinion that all I have described originated in my invention, and desire to amend the specification so as to include the whole.

"Whether I may do this or not is, I suppose, a matter of discretion with yourself. Please advise me what may be done in the case.

"P. S.—Should you be unable to grant either of the emendations desired, please issue the patent immediately."

On January 4, 1862, the Patent Office replied as follows:

"In reply to your communication of the 31st ult., I have to say your patent will be ordered to issue in pursuance of your request. The defects in your specifications can only be cured by a reissue, as you will see by the accompanying rules."

On January 29, 1862, the Patent Office wrote said Woodbridge as follows:

"In the matter of your application for impt. in projectile for rifled ordnance, filed Feb. 11th, 1852, and passed for issue Mar. 25, 1852, you are informed in answer to your letter of Dec. 31, 1861, that, in the judgment of the office, the length of time you have allowed your invention to slumber is a bar to the grant of a patent at the present. For nearly ten years (contrary to sec. 34 of the printed rules) you have suffered your application to remain locked up within the secret archives of this office—not merely beyond the reach of the public but beyond even the cognizance of the examiners and other officers of this Department. In the meantime various patents embracing the same invention have been issued in England, and have for years been published in this country. The English patents of C. C. Minie, May 31, 1854, No. 1208; of A. E. L. C. Timmerhaus, No. 728 of 1855; and of A. V. Newton, No. 1381, of 1856 may be referred to as examples of a jamming or packing annular sabot on the rear of an ovoid projectile. The American patent of L. Houghton, Apl. 3, 1855, for the same device has for more than six years been before the public, and of this, at least, you were certainly bound to take notice if you wished to secure your protection. And yet the only reason assigned in your letter of Dec. 31 for this very unusual delay and prolonged silence is that you supposed the invention would not prove remunerative until recently. It is to the vigilant and not to the slumbering that the law extends its care; and in Simpson's appeal to the circuit court, D. C., it was held by Judge Dunlop that an application not renewed within two years after a previous application by the same party had been withdrawn must be considered in law as abandoned, even though the withdrawal was occasioned by the wrongful rejection of the office. (Decision made Apl. 9, 1861, and recorded in Book of Appeals No. 3, page 453.) On the doctrine of abandonment, as thus expounded, the office must refuse your claims; and this may be regarded as a second rejection of your application. By the 2d and 3d sections of the act of Mar. 2, 1861, you have the remedy of an appeal from the examiner's decision to the board of examiners-in-chief."

IV.

The reason of said Woodbridge for his delay in requesting issue of the patent allowed him was, as stated by him in communications to the Patent Office, that he thought that course best fitted to enable him to avail himself of the value of the patent, as by procuring delay in the issue of the patent the wants of the Government might demand the invention before the patent should expire, and that as the invention could be made available only by the necessities and action of the Government, he thought the intent of the law that the inventor should have 14 years' exclusive use of his invention could in no other way be so well attained in the case of this particular invention "as by deferring the issue of the patent to a time when it could be brought into practical use."

V.

On April 15, 1862, said Woodbridge entered an appeal to the Board of Examiners in Chief from the decision of the Examiner refusing the issue of a patent to him on his said application.

On July 10, 1862, the Board of Examiners in Chief affirmed the decision of the Examiner, of which fact the said Woodbridge was notified by Patent Office letter of July 15, 1862.

No appeal was taken from said decision of the Board of Examiners in Chief until January 7, 1871, when said Woodbridge appealed therefrom to the Commissioner of Patents. A hearing on the appeal was set by the Commissioner for February 14, 1871, notice of which was on January 19, 1871, erroneously mailed to said Woodbridge at Perth Amboy, N. J., an old address of his, and therefore did not reach him. A few weeks later, upon learning of this fact, he informed the Commissioner that the notice had not reached him. Thereupon another day was set for the hearing; but the Commissioner later found this date impracticable and promised Woodbridge that he would give him notice of another date for the hearing. No further action appears to have been taken in the matter, either by the Patent Office or by said Woodbridge until in January, 1879, when the Patent Office, by letter of January 13, in response to a recent request by Woodbridge, notified him that the hearing was set for January 23 following. The appeal was heard by the Commissioner on the 26 day set, and on February 13, 1879, the Commissioner affirmed the decision of the Board of Examiners in Chief refusing Woodbridge a patent, on the ground that his said application, in contemplation of law, had been abandoned by him.

On April 9, 1879, Woodbridge appealed from the Commissioner's decision to the Supreme Court of the District of Columbia, by which court the Commissioner's decision was, on February 28, 1880, affirmed.

VI.

The invention of Woodbridge covered by the amended and allowed claims of his said application was not in public use or on sale prior

to the date of the filing of said application in the Patent Office, nor was it in public use or on sale with his express consent and allowance as inventor thereof within the period from March 25, 1852, to December 31, 1861.

VII.

Before making his said application for patent the said Woodbridge had, in the year 1850, directly brought his said device to the attention of the United States War Department; and beginning on September 19 of that year trials or tests of projectiles equipped with the device were made on behalf of the United States at Fort Monroe, Va., by officers of the Ordnance Department of the Army, in conjunction with the said Woodbridge. In these tests a rifled gun was used, and all sabots tested on the projectiles were provided with projections on their exteriors corresponding with and fitting into the rifle grooves of the gun, as illustrated by Fig. 5 of the drawings of said application for patent, set forth in Finding I hereof.

Official reports on these tests were made by Colonel Huger and Major Mordecai, officers in charge of them, in November and December, 1850, as follows:

On November 5, 1850, Colonel Huger reported to the Ordnance Bureau as follows:

"In obedience to instructions received from your office, dated September 12th, I have furnished Dr. Woodbridge a target and means of trying his proposed shell fired from a rifled 6-pdr. gun. I have kept a record of the trials made and furnished Dr. Woodbridge with a copy of it for your information.

"It appears from the penetration of his shot that they have a greater force than the round shot of the same calibre. Having used up the shells he had on hand, I did not think it worth while to go to the expense of procuring more to perfect his plan of a percussion fuze, as I am satisfied, and I suppose it is generally conceded, that if the shell goes one end first it can be made to explode on striking. That this would be as advantageous as some suppose, I am not prepared to say.

"The plan of Dr. W. to increase the efficiency of projectiles by increasing their weight and diminishing the resistance of the air appears to me to be founded on correct principles, and will no doubt be an improvement if it can be rendered practicable in service."

On December 9, 1850, Major Mordecai reported as follows:

27 *Report on Dr. W. E. Woodbridge's Proposed Plan for Giving a Rifle Motion to Cannon Balls.*

"The plan under consideration consists essentially in attaching to the cannon ball a cylindrical cup or sabot, on the surface of which there are projections which fit into rifle grooves cut in the bore of the gun; the rifle motion thus given to the sabot is to be communicated to the ball by the adhesion of the former to the latter.

"Under the authority of the Secretary of War a 6-pdr. brass gun was prepared on this plan at the Washington Arsenal under the direction of Dr. Woodbridge. It has 32 grooves about 1/10 inch deep; the 'lands' are nearly of the same width as the grooves; the grooves have a twist of one turn in 40 feet. The sabots were made of a composition of lead and tin, cast in a mould grooved like the gun, but allowing sufficient windage for them to enter easily into the bore; length of sabot 3 in., weight 2½ lbs. The shot used in the trials were oblong (egg shaped) shells, of which the smaller end was lodged in the sabot; weight of shell about 7½ lbs.

"The only trial made with this gun in my presence was to fire three rounds for the purpose of ascertaining the practicability of loading and firing in the manner proposed. The charge for the 1st round was 6 oz-. of powder; the 2d, 12 ozs., and the 3d, 1 lb. The sabots were greased with tallow and the gun was carefully cleaned with a hair brush and also with a common sponge. With these precautions there seemed to be no difficulty in loading. After the 3d round there was observed to be a slight indention, or lodgement of the ball, on the lower side of the bore. I was apprehensive that this lodgement hight be increased by subsequent fires, so as to deform the grooves, and having no suitable place at this arsenal for erecting a target to ascertain the results of the trial, I recommended that the further trials should be made at some other post. The gun and apparatus were accordingly sent to Fort Monroe Arsenal, where further experiments were made in the presence of Col. Huger, which I did not witness, and the results of which have not been communicated to me.

"These results will be shown by Col. Huger's report, and my 'opinion of the merits of the invention' is found on the examination which I have made of it here. Before giving my opinion on the particular contrivance of Dr. Woodbridge, I will premise that, in view of the great improvements which have been recently made in the accuracy and effective range of small arms, by firing elongated balls from rifle barrels, I have for some time thought that it is to the application of the same principle to cannon that we are to look for a similar improvement in the accuracy and effect of their fire. This opinion seems to be borne out, in a remarkable manner, by the results of experiments made in Sweden with rifle cannon by Major Cavalli of the Sardinian artillery, as set forth in his 'Memoire sur les Canons se chargeant par la culasse,' lately published. This construction of the gun and ammunition would also lead immediately to the preparation of a shell which would explode in passing through a ship's side. But however great the advantages to be thus gained, I consider it indispensable for the military service that they should not be obtained at the sacrifice of that simplicity in the preparation and use of ammunition which is an essential condition for the easy
28 and rapid service of artillery, either in the field or in garrison, and this condition, I think, is not fulfilled by the arrangement proposed by Dr. Woodbridge. The metallic sabot has the great inconvenience of adding largely (nearly one-third) to the weight of ammunition for field service, which would render necessary a pro-

portionate reduction in the number of rounds to be transported by a given number of wagons and horses. In the service of heavy ordnance great inconvenience would raise from thus increasing the weight of the projectile, and I should consider it inadmissible unless accompanied by a corresponding increase in the capacity and momentum of the projectile. In the trials which I witnessed the sabot became separated from the ball at a short distance from the muzzle of the gun, but even if this should not generally be the case, I do not suppose that the sabot would become so connected with the ball as to accompany it always in long ranges.

"Another objection to the proposed plan is that in the rough handling to which shot are exposed in service these metallic sabots would almost inevitably be bruised and battered so as to prevent their insertion into the gun. Further, whatever may have been the result of the trials thus far made, I believe that in firing a very moderate number of rounds, the bore of even an iron gun grooved in the manner proposed would be so much injured as to prevent the insertion of the sabot; and even without such injury, I apprehend that the dirt deposited by the powder would not be so thoroughly removed in ordinary practice as not to form a serious obstacle to the service of the piece, which might be rendered useless for a considerable time by having such a sabot stuck fast in the bore. These evils would, I think, be much diminished by greatly reducing the number of grooves and increasing their width, but I apprehend that they would not be entirely obviated by this change alone.

"I may here remark that the principle of Dr. Woodbridge's method of giving a rifle motion to a cannon ball was suggested and perhaps tried some years ago in England, as will appear by the following extract from Greener on Gunnery, ed. 1846, p. 85. 'There is either now on trial, or shortly will be, a plan proposed by the late Joseph Manton of applying the principle of a rifle to artillery. His idea was, that if a motion on an axis, parallel to the horizon could be given to cannon balls, they would range further and with greater accuracy; but as there exists great difficulty in causing the rifling in a gun to act upon an iron ball, he constructed a cup of wood, into which the ball was fitted, projections were made upon the wood to fit into the grooves of the rifle, the spinning motion thus being communicated to the ball by its wooden adjunct. The result was twofold, for the expansions of the wood during the explosion filled the tube of the gun tight and effectually destroyed the windage. The Government of the day did offer him a premium of 1 farthing each; but 'Joe' overreached himself, asking the sum of £30,000 down; this they refused, and the patent was allowed to expire without the Government taking any advantage of it. However, this principle is now about to be revived again, and very probably ere this work is out of the press, we shall have startling announcements of improved practice, with a new shaped ball.'

"It would be interesting in this connection to know the result of these trials if they were made, and also of those that were to be
29 made last summer at Woolwich with Major Cavalli's breech-loading cannon, which, I presume, was also rifled.

"Although I do not regard Dr. Woodbridge's plan as applicable to the service in its proposed form, I think, as before remarked, that his efforts at improvement in ordnance are in the right direction, and I am therefore of opinion that the prosecution of them deserves reasonable aid from the Government, in the hope that something practically useful to the service may result from them. The continuance of the experiments to some extent need not be attended with much expense. A brass gun, such as was used in these first trials, is unsuited for any extended experiments, on account of the softness of the metal, and it was used only on account of its greater safety from accidental explosion. But Major Cavalli's experiments in Sweden have shown that a cast-iron gun may be very well used for such a purpose, and further trials might, therefore, be made at a moderate expense with a condemned 32-pdr., or with the experimental 24-pdr. which was made some years ago on the model of a 32-pdr. for trials of Mr. John Mason's shells, if that gun is still in existence."

On December 14, 1850, Colonel Huger reported to the Secretary of War as follows:

"In compliance with instructions from the War Department, dated December 3, requiring Major Mordecai and myself to report on a cannon offered by Mr. W. E. Woodbridge, I have the honor now to report:

"1st. That a statement of all the trials in my presence were, at the request of Dr. Woodbridge, forwarded through him to the Chief of Ordnance.

"2nd. That my opinion is that Dr. W. is searching in the proper direction to increase the accuracy and power of penetration of projectiles, viz, in giving them such form as to increase their weight and diminish the resistance to the air. To do this it is essential to give them a rotary motion around their longest axis—rifle motion. In the experiments with a 6-pdr. gun this motion was given by means of a metallic sabot, but no arrangements were made to adapt it for service, and I doubt if the ammunition could be conveniently arranged to render it suitable for field service, or if it would offer sufficient advantages to cause its adoption even if the ammunition could be so arranged.

"As regards its application to higher calibres, I have seen nothing to altar my opinion expressed to Dr. W., when he first explained to me his plans: 'That if he was prepared to carry on his experiments for five years at an annual expense of about fifty thousand dollars, we would probably at the end of that time be enabled to determine whether his plan was practicable and of sufficient value to cause its adoption.'

VIII.

After the filing of his said application for patent said Woodbridge, in or about December, 1852, caused to be printed and published under his name a pamphlet entitled "A Plan for Increasing the Efficiency of Cannon by Giving the Rifle Motion to Cannon Projectiles," which pamphlet contained the drawings and a full description of his said

device as it was disclosed by his said application for patent.
30 This pamphlet described the operation of the device and referred to and quoted from the said reports of the trials or tests of the device conducted at Fort Monroe by officers of the Ordnance Department in 1850, and described the alleged advantages of the device, but did not disclose the fact that a patent for said device had been applied for, or who was the inventor of the device.

Copies of said pamphlet were publicly distributed during the period between December, 1852, and December, 1861, and a copy thereof was placed in the file of Woodbridge's said application for patent.

Said pamphlet found a lodgment in public libraries, and was brought by said Woodbridge to the attention of Members of Congress and others likely to be interested in the promotion of the adoption of the device. Through this pamphlet said device was also disclosed to foreign countries in which said Woodbridge did not have or attempt to procure patent protection.

IX.

The following patents and publications related to the prior state of the art to which the said Woodbridge invention and application related

1. British patent to Wilkinson, No. 1,694, dated August 29, 1789.
2. British patent to Manton, No. 1,893, dated July 5, 1792.
3. French patent to Delvigne, No. 7,175, dated April 13, 1840.
4. Greener on "The Science of Gunnery," 1841, page 299.
5. An article by Holdstock on "Rifled Shot" in Mechanics Magazine for the year 1843, volume 39, pages 38 and 39.
6. An article on page 189 of the Artizan of 1846.
7. An article by Holdstock on gunnery in Mechanics Magazine for the year 1846, volume 44, pages 439 and 440.
8. French patent to Morel, No. 2,333, dated August 17, 1846.
9. French patent to Minié, No. 4,066, dated February 13, 1849.
10. The rejected application of Francis Mayer, filed March 12, 1851, for United States letters patent on "novel forms of shot."

Said patents and publications are by reference made a part of these findings of fact as exhibits A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, and A-10, respectively.

As to the above French patents to Delvigne, Morel, and Minié, Exhibits A-3, A-8, and A-9, the dates of their issue and publication do not appear further than appears from the patents themselves. The rejected application of Francis Mayer, Exhibit A-10, filed in 1851, was cited by the Patent Office against the original claims of the Woodbridge application, as shown by Finding II.

X.

During the nine and one-half years intervening between the filing of Woodbridge's said application in the secret archives of the Patent Office and his request on December 31, 1861, for the issuance of a

patent thereon, a large number of improvements in projectiles was added to the art, among which were those disclosed by United States patents as follows:

31 1. Hotchkiss, No. 13679, October 16, 1855.
2. Sawyer, No. 13799, November 13, 1855.
3. James, No. 14315, February 26, 1856.
4. Read, No. 15999, October 28, 1856.
5. Cochran, No. 25951, November 1, 1859.
6. Cochran, No. 26016, November 8, 1859.
7. Cochran, No. 26337, December 6, 1859.
8. Hotchkiss, No. 29272, July 24, 1860.
9. Cochran, No. 30123, September 25, 1860.
10. James, reissue, No. 1098, December 11, 1860.
11. Hotchkiss, No. 32293, May 14, 1861.
12. Dahlgren, No. 32986, August 6, 1861.
13. Parrott, No. 33099, August 20, 1861.
14. Parrott, No. 33100, August 20, 1861.

Said patents are by reference made a part of these findings of fact as exhibits B-1, B-2, B-3, B-4, B-5, B-6, B-7, B-8, B-9, B-10, B-11, B-12, B-13, and B-14, respectively.

XI.

During the succeeding 10 years, from December 31, 1861, to said Woodbridge's appeal, on January 7, 1871, from the decision of the Board of Examiners in Chief, rendered on July 10, 1862, there were added to the projectile art the improvements disclosed by the following United States patents:

1. James, No. 34207, January 21, 1862.
2. James, reissue, No. 1275, February 11, 1862.
3. James, No. 34950, April 15, 1862.
4. Hubbell, No. 35825, July 8, 1862.
5. Sturtevant, No. 36116, August 5, 1862.
6. Sawyer, No. 36172, August 12, 1862.
7. Schenkl, No. 36576, September 30, 1862.
8. Mann, No. 37352, January 6, 1863.
9. Stafford, No. 37557, January 27, 1863.
10. Roberts, No. 37979, March 24, 1863.
11. Sawyer, No. 38699, May 26, 1863.
12. Dimick, No. 39216, July 14, 1863.
13. Arick, No. 39369, July 28, 1863.
14. Schenkl, No. 39682, August 25, 1863.
15. Absterdam, No. 41668, February 23, 1864.
16. Arick, No. 44061, September 6, 1864.
17. Henry, No. 45462, December 13, 1864.
18. Schenkl, No. 45951, January 17, 1865.
19. Arick, No. 47078, March 28, 1865.
20. Hotchkiss, No. 47725, May 16, 1865.
21. Dana, No. 50692, October 31, 1865.
22. Cochran, No. 56712, July 31, 1866.

Said patents are by reference made a part of these findings of fact as exhibits C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-13, C-14, C-15, C-16, C-17, C-18, C-19, C-20, C-21, and C-22, respectively.

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XII.

During the period of time from the year 1861 to March 25, 1869, the United States used, in rifled cannon of the Army and Navy, large quantities of hard-metal projectiles of various types, having rifle rings, or sabots, and casings of softer metal.

Different types of these projectiles are shown and described by exhibits 1 to 12 set forth in the appendix to these findings of fact.

The weights of the projectiles of these different types shown by the evidence to have been so used by the United States during said period were as follows:

Dana (exhibit 1), 12,600 pounds.
Stafford (exhibit 2), 126,150 pounds.
Dyer (exhibit 3), 3,430.772 pounds.
Absterdam (exhibits 4 and 5), 931,904 pounds.
James (exhibit 6), 3,848.517 pounds.
Arick (exhibit 7), 47,000 pounds.
Hotchkiss (exhibit 8), 11,329.696 pounds.
Parrott (exhibit 9), 13,891.922 pounds.
Parrott (exhibit 10), 35,960,104 pounds.
Sawyer (exhibit 11), 524,240 pounds.
Dahlgren (exhibit 12), quantity not satisfactorily shown.

A reasonable royalty for use by the United States during said period of the said Woodbridge invention would be sixty-five hundredths of a cent per pound of the weight of projectiles upon which said invention was used.

XIII.

The said William E. Woodbridge was the first and original inventor of the improvements in ordnance projectiles for which letters patent were, on March 25, 1852, ordered to issue by the United States Patent Office, upon his said application of February 11, 1852; and he was at that time entitled to a patent therefor.

XIV.

It does not appear that any of the improvements or devices for which letters patent were so ordered to issue to the said William E. Woodbridge were manufactured or used by the United States as alleged by the plaintiffs' petition in this suit.

Conclusion of Law.

Upon the foregoing findings of fact the court decides, as a conclusion of law, that the plaintiff's petition should be, and it is hereby,

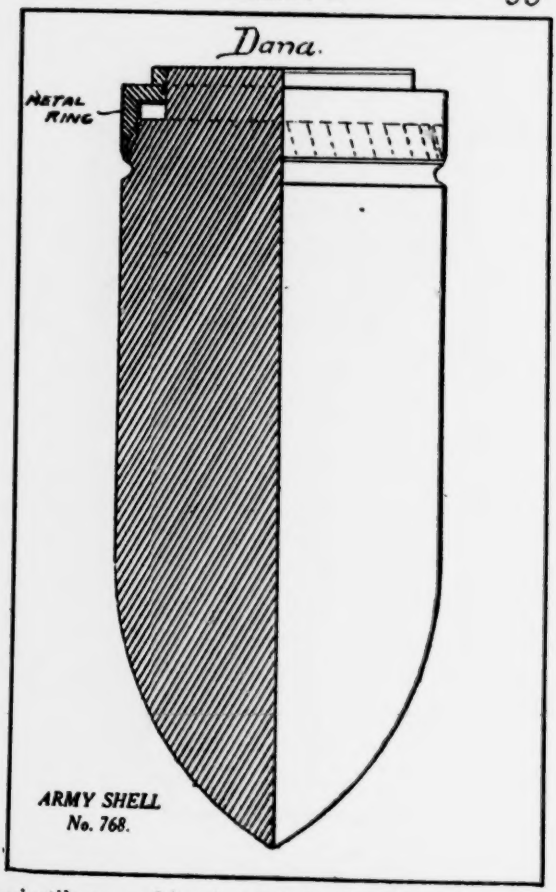
dismissed. Judgment is rendered in favor of the United States, against the plaintiff, for the cost of printing the record herein, the amount thereof to be entered by the chief clerk and collected by him according to law.

(Here follow Exhibits 1-12, inc., marked pages 33-44, inc.)

45 **Opinion.**

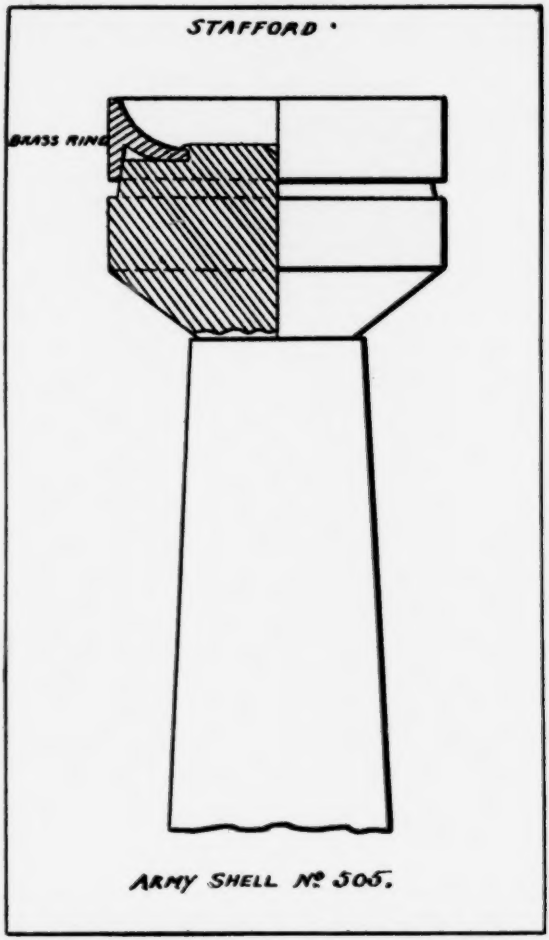
BOOTH, *Judge,* delivered the opinion of the court.

This case, in point of fact at least, is sui generis. The plaintiffs' decedent, William E. Woodbridge, on the 11th day of February, 1852, filed in the Patent Office an application for Letters Patent for a new and novel invention relating to projectiles for rifled cannon. On March 25th thereafter a patent was ordered to issue to said Woodbridge. On March 23, 1852, two days preceding the order to issue by the Commissioner, Woodbridge, in a written communication addressed to the Commissioner, requested, when the order to issue letters for his patent was made, that the same be filed in the secret archives of the patent Office, adding that if it was necessary to specify any special length of time, he would specify one year. On April 15, 1852, Woodbridge was duly notified that the order to issue had been duly made, and in compliance with his request the application had been duly filed in the secret archives of the office, subject to his direction and order as to time of issuing the patent. On December 31, 1861, 9 years, 8 months, and 16 days later, Woodbridge wrote to the then Commissioner of Patents requesting that the patent be issued on the application allowed March 25, 1852. This was admittedly the first and only effort made by Woodbridge during this long period of time to obtain his letters patent. Following this communication the Commissioner, on January 4, 1862, pursuant to Woodbridge's request that the patent be issued, informed him that it would be issued as requested; but subsequently, on January 29, 1862, revoked his previous order and declined the issuance of the requested letters on the ground of laches and abandonment. On April 15, 1862, Woodbridge appealed from this ruling of the Commissioner and lost said appeal on July 15, 1862, the Board of Examiners in Chief sustaining the Commissioner. On January 7, 1871, Woodbridge appealed to the then Commissioner of Patents in person, requesting a hearing. The Commissioner acceded to the request, but through some misadventure the hearing did not then take place. Woodbridge seems to have done nothing more until January 23, 1879, eight years thereafter, when he pressed for a hearing, which was granted, and on February 13, 1879, all former decisions were affirmed. Woodbridge then appealed, on April 9, 1879, from the decision of the Commissioner to the Supreme Court of the District of Columbia, where, on February 28, 1880, the decision was affirmed. Twenty-one or more years after this event the Congress passed the jurisdictional act hereinafter mentioned referring the case to this court for adjudication. The plaintiffs' petition



This projectile was of hard metal, having at its base a soft-metal ring, which surrounded a reduced portion of the projectile and extended forward over a tapering shoulder on the body of the projectile proper, the forwardly extending flange being also beveled or tapered. The action of the projectile when fired from a gun was that the powder gas drove the soft-metal ring forward onto the hard-metal body, the forward movement being limited by a square shoulder, and by wedging action expanded the soft metal. If fired from a rifled gun, the expansion of the soft-metal ring by wedging action caused it to fill the grooves of the rifling, thus giving rotary motion to the projectile, and, at the same time, closing the opening which would otherwise exist between the lands and grooves in the rifling, thereby cutting off the escape of gas, commonly called "windage." This projectile was a modification of the projectile shown by United [illegible] letters patent No. 50692, to Dana, dated October 31, 1865, [illegible] patent constitutes Exhibit C-91 to [illegible]

EXHIBIT 2.



This drawing illustrates the rear end of the Stafford projectile, which was a subcaliber projectile. This projectile had a hard-metal base, surrounded by a brass ring interlocked with the base of the projectile proper. The ring was concave at the rear end and projected beyond the hard metal of the projectile proper, and had a flange which tapered forward and surrounded a beveled shoulder on the rear of the hard metal of the projectile. When fired in a gun the forwardly projecting flange of the brass ring was expanded by wedging action caused by its sliding, within the limits allowed by the square shoulder, along the beveled base of the projectile, the rear concavity of the projectile being at the same time expanded outwardly by the direct action of the gas. This projectile was a modification of the projectile shown by United States patent No. 37557 to Stafford, dated January 27, 1863, which constitutes Exhibit C–9 to these findings.

EXHIBIT 3.

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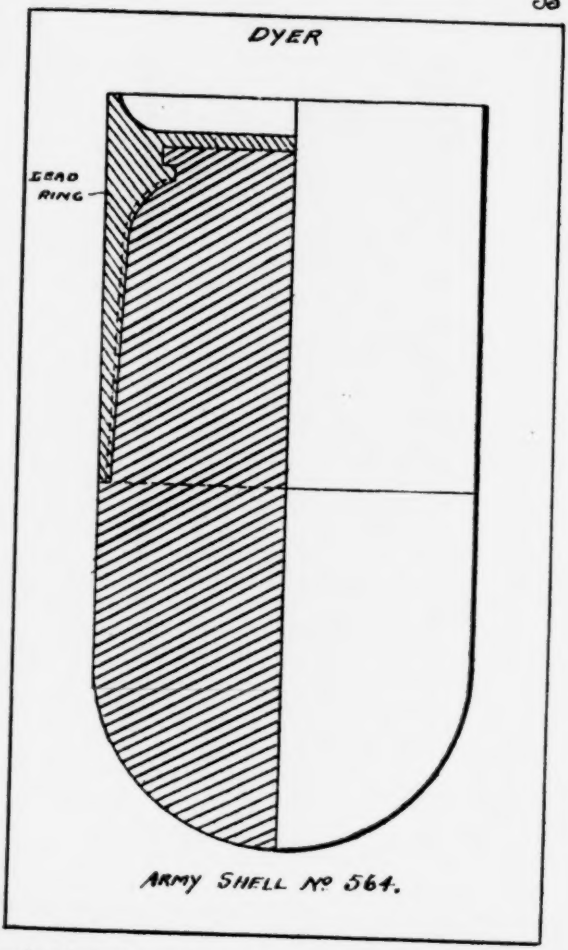
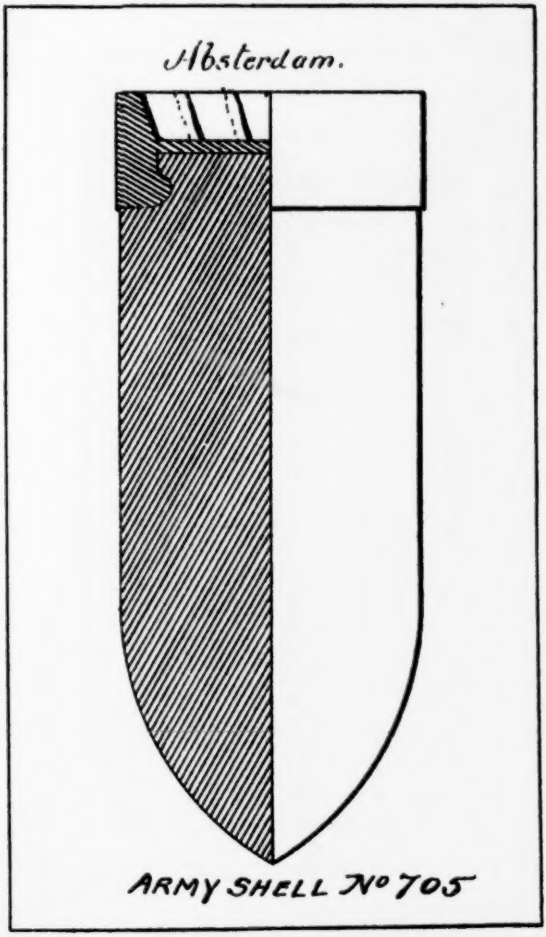


This projectile had a soft-metal cup in which the hard-metal base of the propectile body was inclosed and with which it was interlocked. The soft-metal cup had a flange projecting rearwardly, and when the projectile was fired from a gun the powder gas expanding inside of this rearwardly projecting flange forced the flange outward into the grooves, or rifles, of the gun. There was no wedging [illegible] of the soft metal unless it resulted from "upsetting" of the [illegible] metal along the rounded rear shoulder of the projectile proper.



This projectile was of hard metal with a cup-form sabot of soft metal surrounding a projection at the base of the projectile proper, and interlocking therewith. A flange of the soft-metal sabot extended to the rear of the projectile proper, the flange being diagonally slitted at intervals. When the gun was fired the explosion of the powder expanded this rear flange into the grooves, or rifles, of the gun, thus causing the projectile to follow the rifling, and also cutting off windage. There was no sliding or wedge action of the sabot, this being precluded by the form of the shoulders of the sabot and the projectile proper. This projectile was a modification of the projectile shown by United States letters patent No. 41668 to Abesterdam, dated February 23, 1864, which constitutes Exhibit C–15 to these findings of fact.

EXHIBIT 5.

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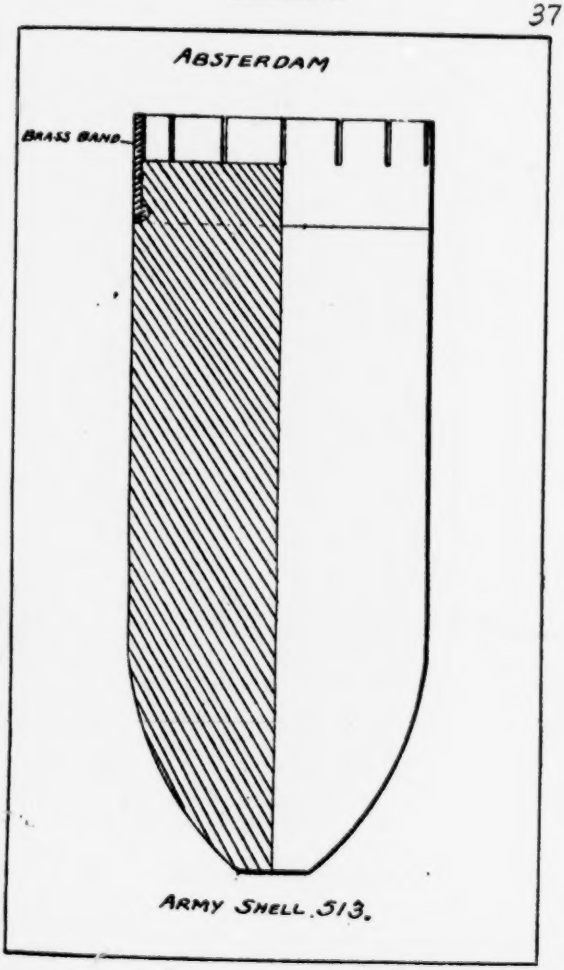
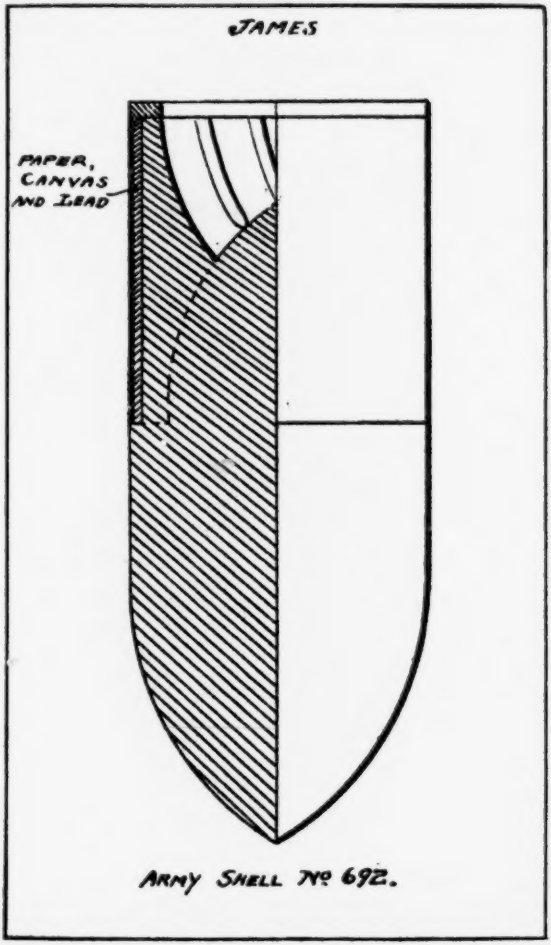
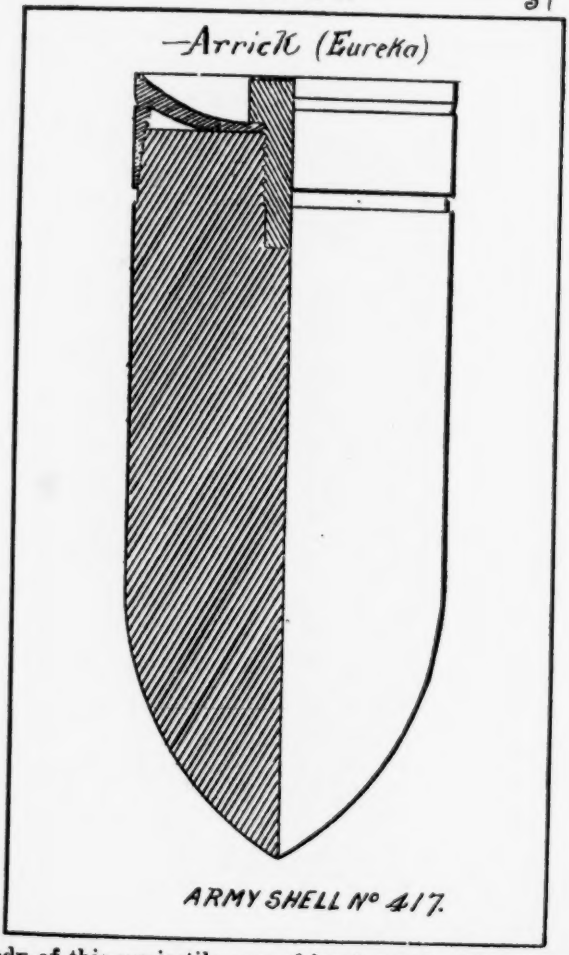


This projectile was of a hard-metal body, flat at the rear end, and slightly reduced in diameter for a short distance forward from the rear, with a shallow groove at the front of this reduced portion. A soft-metal band, marked "brass band" in the drawing, was compressed on the projectile around the reduced portion. This band, or ring, extended rearward beyond the end of the projectile, and was radially slitted in its projecting portion. Upon the firing of the gun the gas entered within the projecting portion of the ring and expanded it into the rifling of the gun. This projectile also was a modification of the projectile of the Absterdam patent No. 41668 of [illegible], constituting Exhibit C–15 to these findings.



The hard-metal body of this projectile had a cup at its base, the sides of the cup being formed of ribs or bars integral with the metal. Surrounding this cup and extending some distance forward of it on the body of the projectile proper there was a compound ring or band, composed in part of some soft metal, apaprently lead, and in part of canvas and paper. Upon the firing of the gun the powder gas entered the cup at the rear of the projectile and passed between the bars or ribs, thus entering between the soft-metal ring and the body of the projectile, expanding the ring outwardly against the walls of the gun, and into the grooves or rifles in the case of a rifled gun. This projectile was a modification, as regards the sabot feature of it, of the projectiles of patents to James, No. 34207, reissue No. 1275, and No. 34950, all of 1862, and constituting Exhibits C–1, C–2, and C–3 in these findings of fact.



The body of this projectile was of hard metal and had a reduced and tapering portion near the rear end. Surrounding this tapering portion there was a soft-metal beveled ring which was connected to a soft-metal concavo-convex bottom piece, forming nearly a cup, which was connected to the projectile by a hard-metal screw passing through the bottom of the cup, and into the end of the projectile proper. When the gun was fired the soft-metal ring was driven forward on the tapered end of the projectile and thereby expanded, and at the same time the concave portion of the cup was expanded outwardly by the powder gas. This projectile was a modification of the types of construction shown by patents to Arick No. 44061 of September 6, 1864, and No. 47078 of March 28, 1865, constituting Exhibits C-16 and C-19 to these findings.

EXHIBIT 8.

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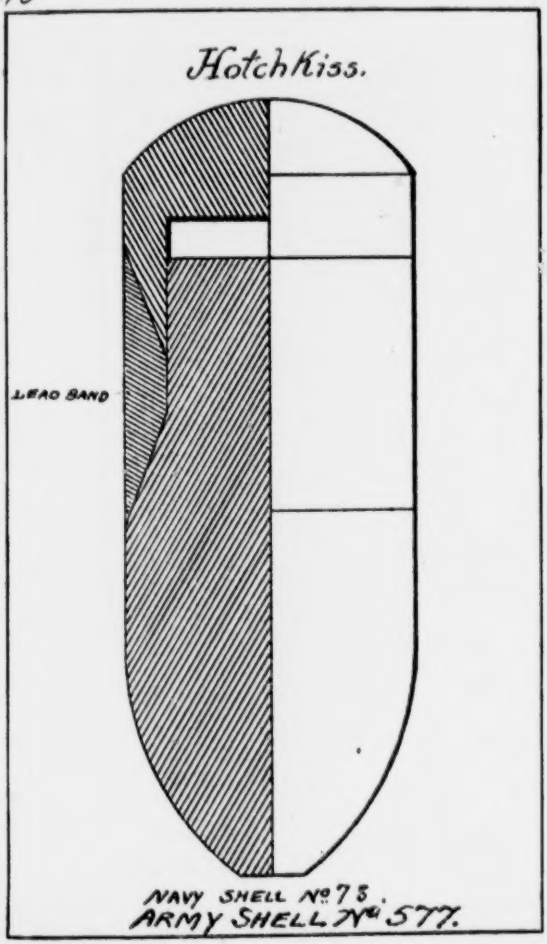

This projectile was made of two hard-metal parts with inclined surfaces telescoping together, upon discharge of the gun, in such manner as to wedge outwardly a band of soft metal encircling them at their juncture, so as to fill the bore and rifles of the gun, cutting off "windage" and causing the projectile to take the rifle motion. This projectile was of the type of construction shown by patents to Hotchkiss No. 13679 of October 16, 1855; No. 29272 of July 24, 1862; and No. 32293 of May 14, 1861, constituting, respectively, Exhibits B–1, B–8, and B–11 to these findings of fact, and No. 47725 of May 16, 1865, constituting Exhibit C–20 to these findings.

EXHIBIT 9.

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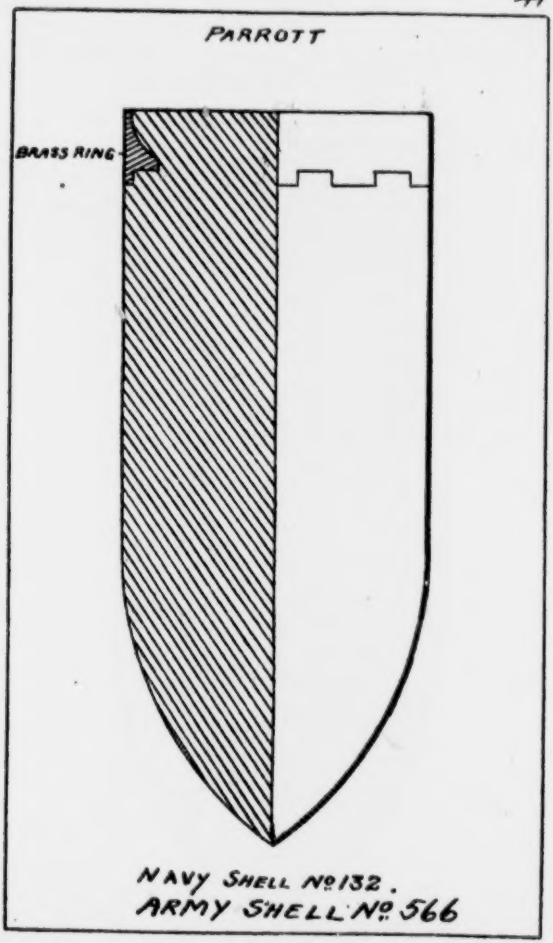
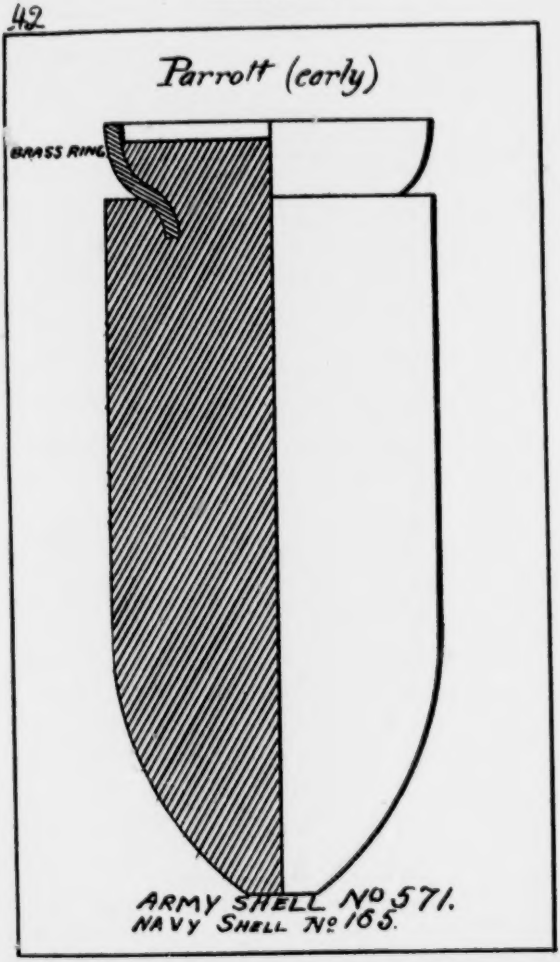


The body proper of this projectile was of hard metal and was cut away at the rear portion, leaving an extension, or tailpiece, of less diameter than the main body and flaring outwardly in rounded contour. A brass ring was compressed into the annular depression thus resulting, the ring having fingers interdenting with fingers on the body of the projectile, in order to prevent separate rotation of the ring and the projectile. When the gun was fired the powder gas forced its way between the ring and the rear extension, or tailpiece, of the projectile and expanded the ring outwardly into the grooves, or rifles, of the gun. This type of construction is shown by patent to Parrott No. 33099, of August 20, 1861, which constitutes Exhibit B–13 to these findings.

EXHIBIT 10.



This projectile had a hard-metal body, with an annular groove in its base, extending forwardly and inwardly, the projectile in the rear of the groove being flared outwardly, but not to the full diameter of the body of the projectile. A brass or other soft-metal ring, nearly S-shaped in cross section, was forced into the groove in the rear of the projectile and fitted up against the extension of the projectile, forming a shallow cup at the rear. Upon the firing of the gun the gas of the explosion expanded this soft-metal ring, or cup, outwardly to close the "windage" and take the rifling of the gun. This form of construction was disclosed by patent to Parrott No. 33100 of August 20, 1861, constituting Exhibit B–14 to these findings.

EXHIBIT 11.

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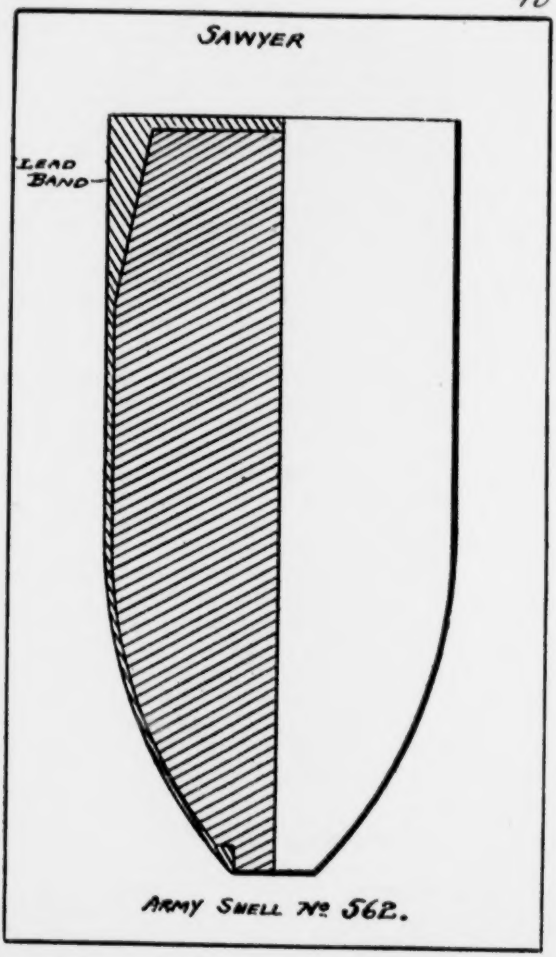
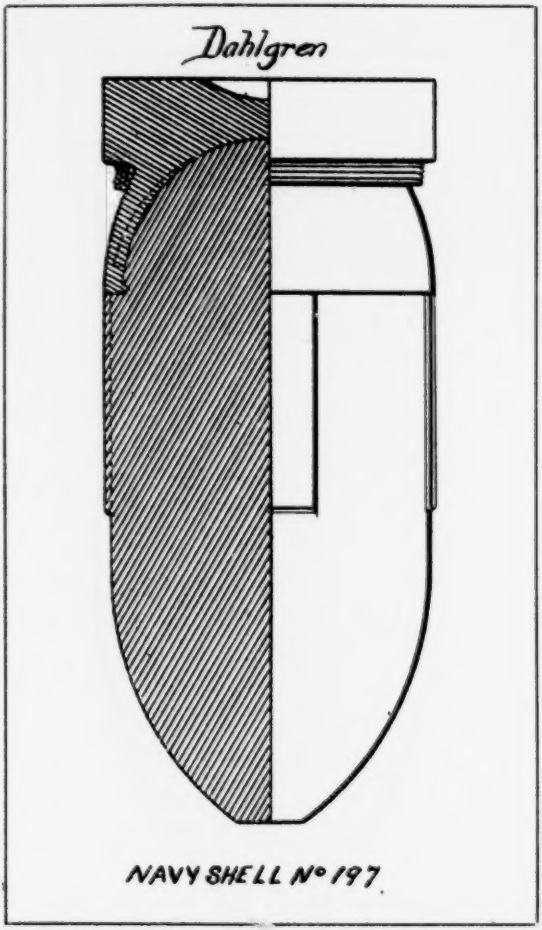


This projectile was of hard metal with a lead or other soft-metal covering enveloping practically the whole of the hard-metal body. The rear end of the hard-metal body tapered rearwardly, the soft-metal covering of this portion of the projectile being thickened increasingly toward the rear. When the gun was fired the soft metal surrounding the tapered rear portion of the hard-metal body was driven forward by upsetting upon itself and was expanded outwardly by reason of the tapered form of the portion of the hard-metal body surrounded by it. This projectile was of the type of construction shown by Patent to Sawyer No. 13799 of November 13, 1855, constituting Exhibit B–2 to these findings of fact.



The main body of this projectile was of hard metal, nearly egg-shaped, with longitudinal ribs on its outer surface. At the base of this body portion there were fingers extending in what might be called a radial direction. These fingers and the rear portion of the projectile proper were incased in a soft-metal cup which was compressed over the ends of the radial projections, or fingers, thus interlocking the soft-metal cup and the hard-metal body. The outer surface of the soft-metal cup was rounded rearwardly and inwardly, and then turned outwardly and continued in cylindrical form. The annular space around the outside of this cup was partly filled with lubricated cord. The rear end of the cup was somewhat concave in form. Upon the firing of the gun the soft-metal cup was upset and expanded outwardly, filling the bore and rifles of the gun. This projectile was of the type of construction shown by patent to Dahlgren, No. 32986, of August 6, 1861, constituting Exhibit B–12 to the findings of fact.

was filed March 7, 1901, and the first deposition in support thereof was not filed for more than five years thereafter, the plaintiffs making no effort to close their case until the year 1913, 12 years after the filing of the petition, and then absorbing an additional period of more than four years in filing briefs. The case was calendared by the court's own motion on January 7, 1918, and finally argued and submitted in April, 1918. Tentative findings were announced by the court in December, 1918, and we are now concluding the final stage of the litigation on the motions of both parties to amend the tentative findings. Thus, it is apparent that we are now considering a claim which had its origin over sixty years ago, and as to which we must first consider the defense of laches and abandonment.

46 Eliminating for the moment the whys and wherefores for this anomalous condition, it is perfectly obvious that such a period of procrastination, even subsequent to the passage of the jurisdictional act of March 2, 1901, in a case so decidedly featured by laches and delays, can not in a judicial forum escape the indubitable conclusion that either some great, positive and obvious wrong was imposed upon the inventor in ancient times, or some ex post facto event suddenly arising in the history of the country gave rise to a consciousness that a claimed invention thought to be valueless was by said event converted into one of value of sufficient proportions to revive its initiatory validity.

It must be conceded as an elementary principle of law that a claim thus circumscribed will be rigidly scanned by the courts, and the reasons advanced for a large money judgment against the defendants must of necessity be sufficiently cogent to overcome the handicap that appears from the sequence of events upon the face of the record, and which are not, and can not be, disputed. The explanation put forward to remove this disability must be clear, positive, and free from abiguity, and clearly attain the stage where, by the exercise of prudence and sound judgment, it would be convincing.

The jurisdictional act, 31 Stat. 1788, under which the court is proceeding, reads as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That the claim of William E. Woodbridge for compensation for the use of his alleged invention relating to projectiles for rifled cannon, for which letters patent were ordered to issue March twenty-fifth, eighteen hundred and fifty-two, by the United States Government, be, and the same is hereby, referred to the Court of Claims of the United States, which court is hereby vested with jurisdiction in the premises, and whose duty it shall be to hear and determine, according to its usual rules of procedure—

"First. Whether the said Woodbridge was the original and first inventor of the said invention and entitled to a patent therefor.

"Second. To what extent the said invention has been used by the United States Government, and what amount of compensation, if any, the said Woodbridge ought to receive, in equity and justice,

from the United States Government for the past use of said inve
tion. And in considering and determining the compensation to
made, if any, the said court shall, if it find that the said Woo
bridge was the first and original inventor of said invention and e
titled to a patent at the time of its order to issue, namely, Marc
twenty-fifth, eighteen hundred and fifty-two, proceed and be guid
in all respects as though the aforesaid letters patent had been actuall
issued for the term of seventeen years from the date of the aforesa
order to issue; the court to render judgment, irrespective of lapse
time, in favor of the claimant with the same effect, including rig
of appeal, as judgments generally of said court: Provided, howeve
That the said court shall first be satisfied that the said Woodbrid
did not forfeit, or abandon his right to a patent, by publicatio
delay, laches, or otherwise; and that the said patent was wrongl
refused to be issued by the Patent Office."

The language of the jurisdictional act, and the fact of its enac
ment, warrants no intendment favorable to the claim.
47 makes no admission of liability and simply provides a foru
for a judicial ascertainment of the plaintiffs' rights. Unite
States v. Mille Lac Indians, 229 U. S., 498. The court will obser
its express mandates and proceed in harmony with its terms. Th
grant of jurisdiction from the terms of the act is sufficiently co
prehensive to cover the usual and ordinary contentions involved i
patent litigation.

The proviso to said act enjoins upon us a preliminary investig
tion. We are to be first satisfied that the plaintiff "did not forfeit
abandon his right to a patent, by publication delay, laches or othe
wise, and that the said patent was wrongly refused to be issued by th
Patent Office." This language is clear and free from ambiguity;
does not admit of strained construction, and in the light of the lo
history of events concerned in the proceedings taken with referen
to the patent, unmistakably indicates both a knowledge of the
events by Congress, as well as an intent to save the defense by pos
tive law. The provision is in effect a condition precedent to th
plaintiffs' right of recovery. It can serve no other purpose in th
context of the statute. A defense predicated upon abandonmen
forfeiture etc., would have been open to the defendants witho
this clause under the preceding terms of the law. When, howeve
Congress in a mandatory provision of the jurisdictional act enjoi
a positive condition precedent, a preliminary requirement whic
must be met before further substantive proceedings may go on,
is a legislative burden cast upon the plaintiffs to meet. We need n
cite authorities to sustain this principle.

Nor do we assent in toto to the ingenious analysis of this provis
by the plaintiffs' attorney. This is a patent case governed by paten
law, and obviously the court will confine its decision to adjudic
tions of the courts with respect to patent litigation, but the scope
the inquiry as to this issue is not limited to any such narrow cha
nels as contended for. The Congress knew that the plaintiff ha
applied for letters patent; that the application had been allowed an
deposited at plaintiffs' request in the secret archives of the Pate

Office. They knew also that no further proceedings had been had by the plaintiffs to obtain the letters until 1861, and they were cognizant of what took place thereafter; hence the very language of the law especially imposes upon the court the investigation of this particular status, in all its detail and legal effect, tending toward or establishing the question of abandonment, forfeiture, laches, and wrongful issue.

Taking up the history of the plaintiffs' case as it appears of record, it is first evident that Dr. Woodbridge was a very eminent inventor of his time; several patents duly issued attest his skill and learning, and therefore exclude any notion that he was in anywise ignorant of the essential proceedings to acquire a patent, or of its value afterward. In 1850 he brought forth the invention for the use of which by the defendants this suit is brought. The defendants, at the request of the inventor, in December, 1850, gave his invention an experimental trial. It can not be claimed, in view of the written report of the experimental trial made by two distinguished ordnance officers, that the inventor up to this time had accomplished more than a mere demonstration that he had conceived an idea which might ultimately develop into a useful and practical invention. As a matter
48 of fact Col. Huger, who had personally conducted the trial, pointedly observes that an expense of about two hundred and fifty thousand dollars would have to be incurred to bring the invention within the range of practical utility, requiring, in his judgment, five years of time to effectually demonstrate the fact. Dr. Woodbridge sensed the force of the report, for, according to his own statement, he thereafter made at least one, and possibly more than one, ineffectual effort to induce Congress to appropriate sufficient funds to enable a continuance of the experiments.

On February 11, 1852, he filed his application for a patent, the one in suit, and in March of the same year preferred his written request to the Commissioner that the application might be filed in the secret archives of the department, recognizing in the communication that the request so made was to be at his own risk, and limiting the secrecy to a period of one year. It is true that he qualified the time limit and also gave as a reason for the specific request his desire to obtain a patent in a foreign country. The order to issue the letters patent followed in March, and his application was, as he had requested, duly filed in the secret archives of the office.

In December, 1852, Dr. Woodbridge, the original inventor, published and circulated extensively both at home and abroad a pamphlet disclosing in detail the device covered by his application for the patent allowed in March, 1852; he quoted extensively from the reports of the experimental trial by the United States Government, and the pamphlet was received in public libraries, by Members of Congress and various other persons interested in this especial art, but nowhere in said pamphlet did he disclose that even an application for a patent of the device had been filed, either in this country or abroad, much less a secret order for its issue. As a matter of fact no attempt was ever made to secure a foreign patent.

Thus the matter rested for nine and one-half years without a

single intervening effort upon the part of the inventor to obtain his letters patent, or in anywise disclose to the public that he even contemplated the procurement of the legal monopoly of 14 years granted by the patent law. Woodbridge in his deposition states that in 1861, after the beginning of the Civil War, on a visit to the West Point Military Academy, in the interest of the adoption of his patent by the defendants, he learned for the first time that the defendants were really using his patent. The way in which he obtained this information was the similarity of the patent granted to Mr. Hotchkiss with his own, the defendants in fact using the Hotchkiss patent. The day of the month of this visit is not given, but we do know from the findings that on December 31, 1861, Dr. Woodbridge, for the first time since April, 1852, evinced an active interest in the final procurement of his letters patent, so long reposing in the hidden archives of the Patent Office. The decedent's letter of December 31, 1861, not only requests the issue of his letters patent in accord with the order to issue entered in 1852, but somewhat in detail seeks an emendation of his original specifications and claims in order to broaden and enlarge the same, so as to include features which were not included in the original application. On January 4, 1862, the Commissioner replied to his request, acceding thereto, but denying the right of emendation except as it might be accomplished by a reissue of letters patent. Twenty-five days later, however, on
49 January 29, 1862, upon a reconsideration of the decedents' request, it was denied in toto, and a positive refusal to issue the requested letters was entered by the Commissioner, accompanied by statements of the reasons therefor. The Commissioner pointed out to him the forfeiture and abandonment of his rights by prolonged delay and cited the rules of the department and an adjudicated case to sustain his ruling. In April following Dr. Woodbridge appealed to the Board of Examiners, which board sustained the Commissioner, and almost nine years later, viz: on January 7, 1871, Woodbridge prosecuted an appeal from the Board of Examiners to the Commissioner of Patents, the former ruling being again affirmed, whereupon he appealed to the Supreme Court of the District of Columbia, resulting in a final affirmance of the Commissioner's decision.

The reason advanced, and the only one of record, for this most unusual proceeding, is found in Finding IV. From it two motives are discernible. First. The patentee conceived the course followed as best adapted to attaching money value for the use of his patent. Second. The Government was his only customer, and then not an available one, until its future necessities might make it so. However much the reasons set forth in Finding IV fail to harmonize with those appearing in the letter of March 23, 1852, nevertheless, if there is nothing in this long course of procedure which followed that conflicts with the law, the plaintiffs are within their rights and entitled to what they claim.

We are by the contention urged confronted in the first instance with the legal proposition that a patentee may at his own request conceal the fact of an allowed order to issue a patent for the space

of nine and one-half years from the public and intervening inventors, the latter having in all respects complied with the patent law, and then at the moment when patented devices of such a character become of immense value, step in to the prejudice of a party who has had neither actual nor constructive notice of the existence of such a patent, for it must be remembered that between March, 1852, and December, 1861, fourteen inventions covering this identical art were passed to patent and letters granted. The mere statement of the proposition would seem to bring its own refutation. The plaintiffs are not in the position of suing for the use of the patent invented in 1852; their claim is founded upon the analogy of the 1852 patent to a long list of patents issued to various patentees during the period between 1852 and 1869, and for which compensation has been paid them by the defendants.

There is one principle of patent law established beyond peradventure—that is, that the monopoly granted by the patent laws was never intended for the exclusive profit or advantage of the patentee, but includes within its intent the benefits to the public at large as well as the stimulation and advancement of the useful arts and sciences, and while the patentee may be under no obligation to put his patented invention upon the market after he has secured his monopoly, he is burdened with the necessity of disclosing the fact of the existence of such patent through the processes prescribed by law, in the jurisdiction granted by Congress to the officials of the Patent Office. We have no such thing as a secret patent, much less a system of prescribed legality by which a patentee may defer the commencement of the period of monopoly by secreting his allowed application for a patent for a long term of years and thus indirectly prolong such period beyond the time fixed by law, by claiming monopoly from the date of the Letters Patent.

Section 8 of the act of July 4, 1836, 5 Stat., 121, provides, in part, as follows:

"And whenever the applicant shall request it, the patent shall take date from the time of the filing of the specification and drawings, not however exceeding six months prior to the actual issuing of the patent; and on like request, and the payment of the duty herein required, by any applicant, his specification and drawings shall be filed in the secret archives of the office until he shall furnish the model and the patent be issued, not exceeding the term of one year, the applicant being entitled to notice of interfering applications."

It is apparent that the terms of the foregoing statute do not authorize the secreting of applications for a patent indefinitely. The law was clearly intended to protect incomplete applications, to withhold them from publicity for a specified time to enable the applicant to perfect his application. It gave two substantial privileges; the patentee might claim patent rights antedating the date of the issue of his letters patent, six months, and he did not jeopardize his monopoly for a year after issue for failure to file a model, the law expressly authorizing the Commissioner to file his papers in the secret archives of the department, for at this time the law made the filing

of a model a condition precedent to the issuance of Letters Patent. The rights secured to patentees in the then state of the law were manifestly just. Many serious disadvantages might accrue to a patentee through an omission to comply strictly with the rules of procedure in the patent office, when he had in fact conceived a real invention, and the act of 1836 was evidently designed to enable a patentee to get his proper papers on file and comply with other necessary details at the later period of time stated in the act. The decedent never at any time brought himself within the provisions of the act of 1836. On the contrary, his application was completed and allowed, all fees paid and model on file at the very time he requested the filing of his papers in the secret archives of the department. He was not entitled under this statute, giving it the very broadest construction, to more than have his letters patent antedate the date of the issue of the same six months, i. e., from the date the application was filed instead of the date of actual issue of the letters patent. This he did not request, and what he did request was acceded to without any authority of law whatever. The counsel on both sides have exhausted the patent law in search of some authority for the act of the Commissioner and failed. It can not be cited. It is not a strained inference drawn from the letter of request written by the plaintiff to the Commissioner on March 23, 1852, and the Commissioner's reply of April 15, 1852, that the Commissioner believed he was acting under the act of 1836, for the letter of Dr. Woodbridge specified the term of one year as covering the length of time he wished to avail himself of the secret archives. Mr. Decker, an expert witness for the defendants, testifies that the model was filed February 13, 1852, and while this fact would seem to overthrow any surmise of want of knowledge of said fact on the Commissioner's part, nevertheless this seems the only reasonable hypothesis upon which the action could have been taken. We find no proof of the recog-
51 nition of a practice long indulged covering the facts in this case, and we are positively left to surmises and inferences as to how it happened to be allowed. Of one thing we think we are certain, and that is, such a practice finds no legal authority for its indulgence. At the very best the act of 1836 was a permissive statute, granting a limited privilege at the option of the patentee, entailing but one positive duty upon the Patent Office, and that was to notify the applicant of interfering applications, if any, within the year. It can not be enlarged into the grant of a substantive right of indefinite secrecy in behalf of patentees, or made the basis for the erection of secret archives in the Patent Office wherein inventions ready to pass to patent may be repose free of notice to the public and intervening inventors at the will of the inventor making such a request.

One contention vigorously asserted in behalf of the plaintiffs is that the Patent Office wrongfully refused to issue Woodbridge his letters patent on January 29, 1862. In order to attach wrong to the Commissioner's act we presume it must have been legally wrong. To arrive at a conclusion under this issue we must, if it is possible, ascertain the law governing the conduct of both parties to the transaction, and their relative position in relation thereto. There was

no legal authority upon which the Commissioner of Patents could rest his granting of the request to file the decedents' papers in the secret archives of the department, for in any event a longer term than one year, and a fortiori there was no legal right of the plaintiff to make such a request. Everyone is presumed to know the law, and while as between the two parties thus acting contrary to the law, rights of property might not be unduly jeopardized, the rights of third parties can not be affected to their great injury. Thus we are asked to say that a mutual mistake of law may be corrected nine and one-half years after it is made, in order that one of the parties thereto may acquire legal title to an invention which under the law he should have acquired at the time, and recover from a third party without notice a sum of money approximating a half million of dollars, for we must not overlook the fact that if the decedent was entitled to his letters patent in 1861 his right of action as for infringement or on an implied contract immediately obtained. There is no claim, and can be none, that the defendant in this case had any knowledge whatever of any patent rights upon the part of the plaintiffs herein when it used the devices it did use. Must it be sustained by citation of authorities that where a party avails himself of a limited legal privilege granted under an act of Congress, and then through his own neglect allows the limitation therein to lapse and continues for a long space of time in his negligent conduct, that he is not thereby precluded from availing himself of the privilege? The act of 1836 expressly warned the decedent that one year, and one year only, was the period of time within which he must assert his legal rights. There was the single duty cast upon the Commissioner, of warning him of intervening rights by way of interferences during the year; he did not have to summon him to a final assertion of his rights; Woodbridge must take care of himself, and inasmuch as he made absolutely no assertion of said rights until more than eight years after the expiration of the time limit, the right to so assert was lost, and with it goes the right of the Commissioner to act, even if he were so disposed, and this is giving the decedent the benefit of the very broadest construction allowable of the act of 1836. As a matter of fact, it is extremely doubtful in any event, if the Commissioner had any legal right to do what he did in 1852, or the plaintiff to prefer the request he did prefer at the time.

After days and days spent in a review of the long list of authorities cited in the briefs of counsel for both sides, we find in them no case which raises the issue as it is presented by the facts herein. The plaintiffs' attorneys, with manifest confidence, cite two cases as apropos, Smith v. Goodyear Dental Vulcanite Co., 93 U. S., 486, and Colgate v. Western Union Telegraph Co., 6 Fed. Cases, 85.

In the Smith case the inventor filed an application for a patent in February, 1856, and did not receive his letters patent until June 1864. The impediments in the way of his long delayed success were not placed there by any act of the inventor; on the contrary, he was protesting and protesting as vigorously as his limited financial resources would permit, that he had been unlawfully de-

prived of a patent. Three applications had been filed and rejected by the Patent Office. At every stage of the proceedings he was met with adverse rulings from the department, which he was unable to appeal from because of extreme poverty. The plaintiff never, at any time, withdrew his original application or applied for or accepted the fees he had paid. As the court very pointedly observed: "He did not withdraw his application. He did not ask for a return of part of the fee he had paid, nor by any act of his did he indicate acquiescence in the unfavorable action of the Patent Office * * * He appears never to have remitted his efforts until 1864 * * * The office practically acknowledged that the prior rejection had been an error." The case itself was a close one, three Justices dissenting. Contrasting it with the present controversy it seems to us as obviously distinct. The facts in the Smith case detail an acute controversy between the plaintiff and the Patent Office, one vigorously contending for the allowance of his application for a patent and protesting against its rejection, and the other holding adversely to his contention, until finally acknowledging previous error, seeks to right the wrong. Dr. Woodbridge had no difficulty with his application for the patent in suit in the Patent Office. No adverse rulings by the department halted his proceeding or in any manner thwarted his legal right to letters patent. He could have had them for the asking. Instead of completing the transaction, as he had an unobstructed right to do, and obtaining his letters patent, at his own request, he postpones doing what he should have done for a long period of years, during which time, so far as this record discloses, he was not restrained by either financial or other reasons, and then when in his judgment his invention becomes valuable, seeks to obtain letters patent, freely and easily obtainable almost a decade previous. In the Smith case there exists a public record unobscured by secrecy; in the Woodbridge case the papers were reposing in the secret archives of the department at the pleasure, to say the least, of the patentee. In the Smith case the plaintiff was continuously active; in the other, positively inactive until it became to his financial interest to act. There was nothing in the conduct of the inventor in the Smith case to indicate an intention to abandon his rights; certainly
53 nothing authorizing an inference to that effect in the face of the facts he offered in excuse for delay.

In Colgate v. Western Union Telegraph Co., supra, a case similar in most respects to the Smith case, we find little, if any, analogy with the present case. The conduct of Simpson, the original inventor in the Colgate case, as compared with the acts and conduct of the original inventor in this case, is emphatically the opposite. Simpson, between the years 1848 and 1853, bombarded the Patent Office from every angle of dispute and protest against the rejection of his application. At least 22 communications or actions of one kind and another emanated from him, either by letter or personal interviews. It is true he desisted in 1851, making one effort in 1853, because of poverty, or as the court puts it: "He might have taken an appeal from the decision of October, 1849, but the treat-

ment he had received from the Patent Office, afterwards acknowledge- by it to have been wrong and unjust, and the array of distinguished names and telegraphers presented by the office to discourage him, with statements showing how greatly the office relied on information received from them, might well have deterred him from entering, at the time, on a further contest." Thereafter, in 1858, he resumed the contest, and with commendable persistence and activity he maintained it until successful, the court finally sustaining his rights as against intervening inventions upon the ground of a wrongful and illegal ruling in the first rejection of his application which he had never withdrawn, notwithstanding he had applied for and received repayment of his fees. It was said in Adams v. Jones, Fed. cases No. 57, quoted with approval in the opinion of the court, that by the application filed in the Patent Office, the inventor makes a full disclosure of his invention, and gives public notice of his claim for a patent, and that the delay afterwards interposed by the mistakes or obtuseness of public officers where gross laches can not be imputed to the applicant, can not affect his rights.

We need indulge in no further comment as to the contrast between the Colgate case and the pending one, except to point out the very great contrast between the diligence of Simpson and Woodbridge subsequent to the refusal to grant the application made at the beginning of the first period of delay. From 1858 to 1867 Simpson continuously pressed his claims; he suffered no obstacle to deter him. In January, 1862, Woodbridge was notified of a refusal to issue his Letters Patent; in July following an appeal was taken to the board of examiners in chief; the decision of the commissioner was affirmed and Woodbridge notified on July 15, 1862. It was almost nine years thereafter, viz., January 7, 1871, before he appealed from the decision of said board, and it was not until the year 1879 that the appeal was brought to a hearing.

A careful examination of the long list of cases cited by the plaintiff's counsel, too many, indeed, to review in detail, forces the conclusion that they are all predicated, as were the two cases cited above, upon a wrongful and illegal ruling of the Patent Office upon the first application for patent, which was not thereafter withdrawn but followed by persistent protest, both to the department and the public against a manifest injustice, and in all of which appear that laches alone is relied upon as conclusive evidence of abandonment.

54 We do not wish to be understood as now asserting the doctrine that mere lapse of time is sufficient as a single factor in determining the question of abandonment. It is of course a fact, and a very potent one, in reaching the ultimate conclusion upon the subject. We have not approached the case from any such angle. But lapse of time, coupled with the incidents of the periods of delay, and the circumstances of the case in the light of the conduct of the one attempting to excuse it, make up the record from which the question of abandonment and forfeiture must rise.

The authorities sustain, without exception, the doctrine of abandonment in all cases where it is properly made out. Panning Machine Co. v. Keith, 101 U. S., 479, 485. "An inventor can not without cause hold his ap-lication pending during a long period of years, leaving the public uncertain whether he intends ever to prosecute it, and keeping the field of invention closed against other inventors. It is not unfair to him, after his application has been rejected, and after he has for many years taken no steps to reinstate it, to renew it, or to appeal, that it should be concluded he has acquiesced in the rejection and abandoned any intention of prosecuting his claim further."

While the decedent herein never suffered under the disability of a rejected application, can it be said that he is in a more fortunate position that one so handicapped, and relief will be extended to him in case of delay but denied to his less fortunate fellow inventor? He possessed and secured a substantive legal right; its full use and enjoyment was open to him without condition or restraint. The only act he needed to have done was complete his application by a request for his letters patent, which awaited him in the Patent Office. This he did not do, but, contrary to law, clothed his transaction in profound secrecy for nearly a decade, never disclosing to the public that he even contemplated a patent for his invention, nor making the slightest effort to assert his claims, until a sudden public emergency made valuable what during all these years was practically valueless. Certainly it can not be said that the spirit and intent of the patent laws will be advanced by allowing a patentee to conceal his invention for an indefinite time for his own profit and advantage, and then suddenly come forward, when future events make the device valuable, to the prejudice of intervening inventors and the defendants herein, who pursued their course in utter ignorance or notice of any rights or claim of rights upon the part of the lagging claimant. As said in Egbert v. Lippmann, 104 U. S., 333, 337, "It is fair to presume that having learned from this general use that there was some value in his invention, he attempted to resume, by his application, what by his acts he had clearly dedicated to the public."

Again, as well said in Kendall v. Winsor, 21 How., 322, "he may forfeit his rights as an inventor by a wilful or negligent postponement of his claims, or by an attempt to withhold the benefit of his improvement from the public until a similar or the same improvement should have been made and introduced by others. Whilst the remuneration of genius and useful ingenuity is a duty incumbent upon the public, the rights and welfare of the community must be fairly dealt with and effectually guarded. Considerations of individual emolument can never be permitted to operate to the injury of these."

The defendants have cited innumerable cases wherein the courts have not hesitated to interpose as between the diligent and
55 the negligent in patent cases, beginning with Kendall v. Winsor, supra, and extending through the whole line of cases to the more recent ones. It will serve no useful purpose to encumber this already too lengthy opinion with their citation or review. The doctrine of abandonment is too well established to be overthrown now, notwithstanding the peculiar features of this case.

The record discloses that Dr. Woodbridge voluntarily sought secrecy for his application for a patent, as well as the order to issue his letters patent; that he obtained said purpose, it being granted without authority of law; that thereafter for a space of nine and one-half years he made but one substantial effort to have his patent adopted and put in use; that said effort was futile, and thereafter no effort of any sort was made, no notice of any character given that he claimed or intended to claim a patent for the device he had previously applied for, until he discovered the fact that a somewhat similar device, for which another in the meantime had been granted a patent, was being used by the Government of the United States during the Civil War, whereupon he instituted the proceedings resulting in the present suit against the Government. We can not escape the conclusion, in view of these facts, that Woodbridge abandoned his right to letters patent. He admits in a positive statement that the course he pursued was entirely selfish, engaged in to delay the issuance of his patent until the wants of the Government might make it valuable before the date of expiration, clearly demonstrating that in his own mind at least he maintained a doubtful and inchoate purpose to perfect his patent only in the event it would be worth while to do so, and so long as that event failed to materialize, it might rest in secrecy, free from the scrutinizing research of other inventors, and unknown to those who might innocently trespass upon his hidden rights.

Much emphasis is given the public pamphlet voluntarily circulated by Woodbridge, wherein it is alleged he disclosed his invention. There are circumstances in patent contests in which such a publication becomes an important fact. Unfortunately for him, this is not one. How it can be pretended that a paper, such as is here disclosed, was sufficient in itself to give public notice, either that the person issuing it was the inventor of the device set forth or that he intended to apply for a patent therefor, or that he had so applied, is to us inexplicable. The attorney for the plaintiff asserts that any statement in the paper that Dr. Woodbridge was the inventor, or had applied for a patent, "was entirely uncalled for at this time," followed with the general observation 'that it was generally understood by the officials of the Government that he claimed to be the inventor of the invention or plan." What may or may not have been the general impression of the officials of the Government in 1852 can hardly be held to have descended in unbroken sequence to the officials of the Government in 1861. There is no positive proof that the identity of the officials remained the same, and we are at a loss to comprehend the legal force of a proposition that mulcts the defendants in a large money judgment, dependent upon general impressions, when a system of positive laws points out a precise method whereby positive notice of legal rights protects alike both the patentee and the user of his patented device. That the defendants never intended to wrong the plaintiff is obvious, and if they have wronged him, it must be so held on the doctrine of con-
56 structive rather than actual notice of his patent rights. The pamphlet did not clear the situation; it gave no notice of any

patent rights or intention to obtain the same. That the information there given was not available for public use nowhere appeared. Surely this is insufficient to sustain a patent.

We have not gone, and will not go at length into the details of the Woodbridge device and its supposed infringement by the Government in the use of the devices it did use, believing the case concluded upon what has heretofore been said. The court in this respect concludes, however, that the devices used by the Government did not infringe the plaintiffs' invention. The similarity between the devices is found in plaintiffs' claim number one. Reading said claim it is clearly apparent that the purpose for which the decedent employed the "extensible metallic ring or sabot" was in his own words "diminishing the windage and giving the ball its motion in the direction of the axis of the bore." He never conceived the idea that said ring or sabot of claim one could be used to communicate the rifle motion to a projectile, as evidenced by his second claim. The central idea of his conception was to communicate the rifle motion to a projectile in a rifle-bored gun, and to accomplish this purpose he specifies in his second claim the addition of projections to ring or sabot in combination with the rifle bore, the projections being the vital functioning element of his device to give rifle motion, the ring to prevent windage, etc. The inventor himself caught the force of this omission after he had seen the Hotchkiss guns in operation, for he sought to amend his claims in 1861, saying: "The principal idea of the invention was the application of an extensible ring of metal to a tapering part of a projectile in the rear of its greatest diameter, so that the ring might be made to enlarge its diameter by stretching under the action of the powder, at the same time clasping the ball, filling the bore of the gun and taking hold of the grooves." You will search the inventor's claims in vain to sustain the belated contentions thus put forward. What Dr. Woodbridge claimed as his invention in 1861 was not what he claimed in 1852, but was in reality the Hotchkiss idea he had gotten at West Point prior to preferring the amended claim, and which, if allowed, would have made Hotchkiss and the Government infringers.

Dr. Woodbridge was not a pioneer inventor in this particular art. On the contrary, the principles he embraced within his claims had been theretofore conceived, as fully attested by the emendation of his claims to meet the state of the prior art. Therefore his claims are not entitled to the broad construction insisted upon by him in 1861. He submitted without protest to the rulings of the Patent Office calling his attention to the state of the prior art, and refusing his original claims, as they then stood. The applicant willingly adopted the amendments suggested and thereby assented to their limitation; at least he made no effort until nine and one-half years later to enter a protest. The findings, we think, show that under the limited claims, granting arguendo their validity in every respect, the defendants did not use his device, and hence can not be under any legal obligation to respond in damages.

The petition will be dismissed. It is so ordered.

Graham, Judge, Hay, Judge, Downey, Judge, and Campbell, Chief Justice, concur.

57 **VI. Judgment of the Court.**

At a Court of Claims held in the City of Washington on the Twenty-second day of March, A. D. 1920, judgment was ordered to be entered as follows:

The Court, upon due consideration of the premises find in favor of the defendant, and do order, adjudge and decree that the claimants, as aforesaid, are not entitled to recover and shall not have and recover any sum in this action of and from the United States, and that the petition herein be and it hereby is dismissed: And it is further ordered, adjudged and decreed that the United States shall have and recover of and from the claimants, as aforesaid, the sum of Four Hundred and Ninety-two dollars and seventy cents ($492.7-), the cost of printing the record in this case in this court, to be collected by the clerk, as provided by law. By the Court.

VII. History of Proceedings After Entry of Judgment.

On May 20, 1920, the claimants filed a motion for a new trial and for amendment of findings of fact. This motion was overruled by the court on June 7, 1920.

58 **VIII. Claimants' Application for Appeal, Filed September 4, 1920, and Allowance of Appeal, Entered September 10, 1920.**

The above named plaintiffs, considering themselves aggrieved by the judgment and order made and entered on the 17th day of June, 1920, in the above entitled cause, do hereby appeal from said Judgment and order to the Supreme Court of the United States, and pray that this appeal be allowed and that a transcript of the pleadings in the case, the final judgment and order of the Court, the findings of facts by the Court, the conclusions of law of the Court, and the other proceedings and papers in the record herein upon which said judgment and order were based, duly authenticated, may be sent to the Supreme Court of the United States. H. P. Doolittle, Attorney of Record for Plaintiffs. Dated this 2nd day of Sept. 1920.

Filed in Court of Claims September 4, 1920.

The above was indorsed as follows: "The application for appeal is allowed." Edward K. Campbell, Chief Justice. Sept. 10, 1920.

59 Court of Claims.

No. 22504.

SAMUEL HOMER WOODBRIDGE and EDWARD WOODBRIDGE BARNES, Executors of William E. Woodbridge, Deceased,

vs.

THE UNITED STATES.

I, F. C. Kleinschmidt, Assistant Clerk Court of Claims, certify that the foregoing are true transcripts of the pleadings in the above-entitled cause; of the findings of fact and conclusion of law entered by the court; of the opinion of the court by Booth, J.; of the judgment of the court; of the claimants' application for and the allowance of an appeal to the Supreme Court of the United States.

In testimony whereof I have hereunto set my hand and affixed the seal of said Court at Washington City this Fourteenth day of September, A. D., 1920. F. C. Klinschmidt, Assistant Clerk Court of Claims. [Seal of Court of Claims.]

Endorsed on cover: File No. 28,968. Court of Claims. Term No. 418. Samuel Homer Woodbridge and Edward Woodbridge, Barnes, executors of William E. Woodbridge, deceased, appellants, vs. The United States. Filed June 6th, 1922. File No. 28,968.

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IN THE

Supreme Court of the United States.

OCTOBER TERM, 1922.

No. 418 51

SAML. H. WOODBRIDGE AND E. WOODBRIDGE BARNES, EXECUTORS OF WILLIAM E. WOODBRIDGE, DECEASED,

Appellants,

vs.

THE UNITED STATES.

APPEAL FROM THE COURT OF CLAIMS.

BRIEF FOR THE APPELLANTS.

HENRY P. DOOLITTLE,
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GUNTHORP-WARREN PRINTING COMPANY, CHICAGO.

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IN THE

Supreme Court of the United States.

OCTOBER TERM, 1922.

No. 418.

SAML. H. WOODBRIDGE and E. WOODBRIDGE BARNES, Executors of William E. Woodbridge, Deceased,

Appellants,

vs.

THE UNITED STATES.

APPEAL FROM THE COURT OF CLAIMS.

BRIEF FOR THE APPELLANTS.

STATEMENT OF THE CASE.

This case is an appeal from a decision of the Court of Claims in favor of the United States.

The case originated in a special act of Congress, approved March 2, 1901, which was as follows:

> "An act referring to the Court of Claims the claim of William E. Woodbridge for compensation for the use by the United States of his invention relating to projectiles, for which letters patent were ordered to issue to him March twenty-fifth, eighteen hundred and fifty-two.
>
> Be it enacted by the Senate and House of Representatives of the United States of America, in Con-

gress assembled, that the claim of William E. Woodbridge for compensation for the use of his alleged invention relating to projectiles for rifled cannon, for which letters patent were ordered to issue March twenty-fifth, eighteen hundred and fifty-two, by the United States Government, be, and the same is hereby referred to the Court of Claims of the United States, which court is hereby vested with jurisdiction in the premises, and whose duty it shall be to hear and determine, according to its usual rules of procedure—

First. Whether the said Woodbridge was the original and first inventor of the said invention and entitled to a patent therefor.

Second. To what extent the said invention has been used by the United States Government, and what amount of compensation, if any, the said Woodbridge ought to receive, in equity and justice, from the United States Government for the past use of said invention. And in considering and determining the compensation to be made, if any, the said court shall, if it find that the said Woodbridge was the first and original inventor of said invention and entitled to a patent at the time of its order to issue, namely, March twenty-fifth, eighteen hundred and fifty-two, proceed and be guided in all respects as though the aforesaid letters patent had been actually issued for the term of seventeen years from the date of the aforesaid order to issue; the court to render judgment, irrespective of lapse of time, in favor of the claimant with the same effect, including right of appeal, as judgments generally of said court: Provided, however, That the said court shall first be satisfied that the said Woodbridge did not forfeit, or abandon, his right to a patent, by publication, delay, laches, or otherwise; and that the said patent was wrongfully refused to be issue by the Patent Office.

Approved March 2, 1901."

No patent was ever issued on the Woodbridge invention and the object of the act of Congress was to enable the Court of Claims to supply what was the equivalent of a patent and award compensation for the use of

the invention covered thereby provided the conditions specified in the act were found to have been fulfilled and that the Government used the invention or, in effect, infringed the quasi patent thus to be created.

The Issues.

The defenses to the action sustained by the Court of Claims were first, abandonment of the invention, or, as stated in the act "the right to a patent," and second, noninfringement.

The Invention.

The invention related to projectiles for rifled ordnance or cannon and particularly to means adapted to impart the rotary or rifle motion to the shell, to close the bore of the cannon against "windage," that is, the escape of the gases of explosion past the projectile and to cause the projectile to travel directly in the line of the axis of the bore of the gun. It consisted of a ring called a "sabot" or shoe of softer metal than the body of the projectile attached to the rear of the projectile and adapted to be expanded by the force of the exploded gases of the powder charge outwardly into engagement with the wall of the bore of the cannon both against the walls and bottom of the grooves and against the "lands" between the grooves so as to thereby close the bore and also tightly engage the rifle grooves. The result was the prevention of "windage," the rotation of the projectile about its axis producing the rifle motion and the prevention of bounding of the shell in the gun.

The invention was originated by Woodbridge in or prior to 1850. In 1850 it was brought to the attention of the United States War Department by Woodbridge with a view to having the invention adopted by the

Government. Trials of projectiles embodying the invention were made by army officers on behalf of the Government at the Washington arsenal and later at Fortress Monroe. These tests proved the advantage of using elongated projectiles (the present shape of all cannon shot and shell) as compared with round cannon balls and the practicability of the invention for giving the rifle motion to such projectiles. (Findings VII, Rec., 17.) Reports to the War Department on these trials were made by the army officers conducting them.

In the first of these reports that Col. Huger made November 5, 1850, it was said:

> "It appears from the penetration of his shot that they have a greater force than the round shot of the same calibre. * * *
>
> The plan of Dr. Woodbridge to increase the efficiency of projectiles by increasing their weight and diminishing the resistance of the air appears to me to be founded on correct principles, and will no doubt be an improvement if it can be rendered practicable in service." (Rec., 17.)

By service he meant packing, transporting, handling and insertion into the cannon in the field. The report of Maj. Mordecai (Rec., 17-20), following some criticisms of the new projectile, stated:

> "Although I do not regard Dr. Woodbridge's plan as applicable to the service in its proposed form, I think, as before remarked, that his efforts at improvement in ordnance are in the right direction."

The final report of Col. Huger to the Secretary of War, dated December 14, 1850, was as follows (Rec., 20):

> "In compliance with instructions from the War Department, dated December 3, requiring Major Mordecai and myself to report on a cannon offered by Mr. W. E. Woodbridge, I have the honor now to report:
>
> 1st. That a statement of all the trials in my pres-

ence were, at the request of Dr. Woodbridge, forwarded through him to the Chief of Ordnance.

2nd. That my opinion is that Dr. W. is searching in the proper direction to increase the accuracy and power of penetration of projectiles, viz.: in giving them such form as to increase their weight and diminish the resistance to the air. To do this it is essential to give them a rotary motion around their longest axis—rifle motion. In the experiments with a 6-pdr. gun this motion was given by means of a metallic sabot, but no arrangements were made to adapt it for service, and I doubt if the ammunition could be conveniently arranged to render it suitable for field service, or if it would offer sufficient advantages to cause its adoption even if the ammunition could be so arranged.

As regards its application to higher calibres, I have seen nothing to alter my opinion expressed to Dr. W., when he first explained to me his plans: 'That if he was prepared to carry on his experiments for five years at an annual expense of about fifty thousand dollars, we would probably at the end of that time be enabled to determine whether his plan was practicable and of sufficient value to cause its adoption.' "

On February 11, 1852, Woodbridge filed an application for patent on his invention. (Rec., 10.) He personally prepared and filed his application without the aid of an attorney. The specification was accompanied by drawings which were lost by the Patent Office but a copy was filed in court and proved and accepted in Finding I (Rec., 11) by the lower court as a substantial copy of said original drawings. These drawings show the breech portion of a muzzle loading cannon which is rifled, the rifle grooves being designated *e* in plate 1 and Fig. 2. It will be understood, although the drawings do not so indicate, that these grooves are directed slightly spirally or inclined to the axis of the bore of the gun to impart the twisting or rotary motion to the projectile. In the bore of the gun near the breeche is mounted a projectile

B, of ovoid form, as distinguished from the previously used spherical shot and shell. On the rear end of this projectile is mounted a "ring or sabot" *c*. This ring is made of metal "softer than the ball or cannon and capable of extension without rupture." (Specification, Rec., 10.) The cannon ball was made of hard cast iron. The sabot or ring is smaller than the bore of the gun. When the powder charge is exploded, the ring is stretched and expanded to fill the rifled bore. The ring is shown as tapered on its inner face to fit the ovoid end of the ball, so that when the explosion takes place the ring is also driven forward tightly on the ball so as to secure it to the latter and prevent its disconnection during flight. It is also shown as provided with projections which fit into the grooves of the cannon. It is further shown as provided with a circumferential groove or cup-shaped portion at its rear end adapted to act valvularly, that is, catch the gases and spread out at the thinner edges thereby formed, to more effectually prevent the escape of gases past the ring.

This was the specific embodiment illustrated to carry out his broad invention of the soft metal expansion sabot.

At the end of his specification he claimed his invention in the following language:

> "What I claim as my invention and desire to secure by letters patent is the application for rifle ring or sabot construction substantially as herein described, to the rear of a projectile for the purpose of communicating to it the rifle motion, without restricting myself to the particular proportions or material mentioned in the description.
>
> I also claim the use of a similar ring of extensible metal in smooth-bored guns, as set forth in the foregoing specification."

The Patent Office Examiner rejected the application, citing Mayer's rejected application and a publication.

The first was not legally an anticipation, now or then or ever, not being a patent or publication but Woodbridge referred to satisfactory proof that his invention was prior to Mayer. He distinguished by an argument from the publication. Thereupon the Examiner suggested the form of two allowable claims and Woodbridge accepted them.

The claims allowed were as follows:

> "*First.* The construction of an extensible metallic ring or sabot as above described and placed in the rear of the projectile, for the purpose of diminishing the windage and giving the ball its motion in the direction of the axis of the bore; and,
>
> *Second.* A metallic ring similarly formed and placed, and furnished with projections as described, in combination with a rifle-bored gun, for the purpose of communicating the rifle motion in manner substantially as herein set forth." (Rec., 13.)

It is the first of these claims only that it is contended the Government has infringed.

Accompanying the amendment containing the above new claims, Woodbridge filed a request, based on practice then existing according to information of such practice given him by the Patent Office, that his patent when issued or ordered to issue be filed in the secret archives of the Patent Office. He stated:

> "If it is necessary to specify a particular time during which the patent shall remain in the secret archives, you will please consider one year as the time designated by me." (Rec., 13.)

On April 15, 1852, the Patent Office notified Woodbridge that on March 25, 1852, a patent had been ordered to issue on his invention "and in accordance with your request the papers were filed among the secret archives of the office, subject to your directions as to the time of issuing the same."

In December, 1852, Woodbridge printed and published a pamphlet describing his invention and his trials at Fortress Monroe and brought it to the attention of Congressmen and others in the period from 1852 to 1861 in an effort to promote the adoption of his invention. (Rec., 21.)

On December 31, 1861, Woodbridge requested the issue of his patent. On January 4, 1862, the Commissioner of Patents notified him that his patent would be ordered to issue. On January 29, 1862, the Patent Office by an examiner wrote refusing the issue of his patent on the ground that his application for patent had become abandoned.

Woodbridge appealed to the Board of Examiners-in-Chief who on July 10, 1862, affirmed the decision of the Examiner, although upon different grounds.

It was this refusal by the Examiner on January 29, 1862, that constituted the possible "wrongful refusal" covered by the proviso in the act of Congress.

Woodbridge then appealed to the Commissioner of Patents in person in 1871, but appeal was not heard until 1879 when the decision against Woodbridge was affirmed on the ground that his application for patent had been abandoned in contemplation of law. The Supreme Court of the District of Columbia affirmed the Commissioner's decision.

Findings of the Court of Claims.

The court below after finding the above facts also found as facts that Woodbridge was duly entitled to a patent on March 25, 1852, as required by the act of Congress (Rec., 23); that his invention was not in public use or on sale with his express consent or allowance within the period from March 25, 1852, to December 31,

1861 (Rec., 16-17); that certain hard metal projectiles described by the court, and having rifle rings or sabots and casings, of softer metal were used by the Government during the period specified in the act of Congress. (Rec., 23.) It then proceeds to find as a fact that the Government did not manufacture or use the invention "for which letters patent were ordered to issue" to Woodbridge. This finding which is that of noninfrngement of the claim is a conclusion of law and was so excepted to by plaintiffs.

The conclusion of law that plaintiffs' petition be dismissed was based, as appears from the opinion of the court, primarily upon the ground of abandonment of Woodbridge's right to a patent.

The opinion also holds noninfringement of the claim in issue.

Specification of Errors.

The errors assigned and here relied upon are:

"1. The court erred in deciding plaintiffs' petition should be dismissed.

2. The court erred in rendering judgment in favor of the United States against the plaintiffs for the cost of printing the record herein.

3. The conclusion of law of the court and the judgment of the court upon the findings of fact found by the court, or upon such findings as are truly and properly findings of fact as distinguished from conclusions of law, should have been in favor of the plaintiffs.

4. There are no facts to support the conclusion of law.

5. The facts are insufficient to support the conclusion of law.

6. The court erred in not sustaining plaintiffs' exceptions to the findings of fact and motion for a new trial based thereon.

7. The court erred in not granting plaintiffs'

motion to amend Finding 'V' of the findings of fact to include the opinion of the Board of Examiners in Chief rendered during the prosecution of the Woodbridge application.

(Exception on which assignment based.—'Their decision is an act in immediate continuance of the action of the Examiner in the "refusal" of the issue of the patent by "the Patent Office" and the reasons for the refusal given in the opinion of the Board accompanying the decision are facts necessary to be considered in the determination of the legal conclusion that the patent was or was not wrongfully refused to be issued.')

8. The court erred in not granting plaintiffs' motion to amend Finding 'VI,' of the findings of fact to eliminate the word 'express' before 'consent and allowance,' since there is no evidence in this record that the Woodbridge invention was in public use or on sale during the period stated in said finding either with or without the consent or allowance of the inventor.

9. The court erred in not granting plaintiffs' motion to amend Finding 'IX' in the findings of fact to eliminate the reference to the rejected application of Francis Mayer as constituting a part of the prior art, since as a matter of law a rejected application cannot be a part of the prior art.

10. The court erred in not sustaining plaintiffs' motion in respect to that part of Finding 'IX' of said findings of fact which includes reference to the French patents to Delvigne, Morel and Minie, since there is no evidence in the record of the dates of issue of said French patents, or of the dates of their publication, or of the dates of the specifications therein contained.

(Exception on which assignment based.—'The statement that the dates of issue and publication of the Delvigne, Morel and Minie French patents, "do not appear further than appears from the patents themselves," is incorrect as a statement of fact, in that the "patents" themselves do not appear in the granting part of the letters patent, but only certified copies of the specifications accompanying said alleged patents. These copies disclose only the offi-

cial "dates" or *datings* of these patents, namely, the dates of the beginning of the terms of the patents.

It is suggested and moved that the sentence in this finding beginning "to the above French patents" be amended to read as follows:

"As to the above French patent to Delvigne it is here represented only by a copy of the specification, including drawings, certified to by the Commissioner of Patents of the United States as being a true copy of the copy of said specification on file in the United States Patent Office and by a copy of the specification similarly certified to by the French Minister of Commerce, and as to the French patents to Morel and Minie they are here represented only by copies of the specification, including drawings, certified to by the Commissioner of Patents of the United States as true *copies of the specifications and drawings in the United States Patent Office, and the dates of the issue and publication of any of said French patents do not further appear.*"

Plaintiffs further except to any finding of said French patents as being in the prior art on the ground of said lack of proof of issue and publication.')

11. The court erred in not sustaining plaintiffs' motion to amend Finding 'X' of said findings of fact to eliminate the general reference to improvements added to the art during the period named in the finding, since there is no evidence in the record that any improvements other than those contained in the particular patents enumerated in said finding were addded to the art.

12. The court erred in not sustaining plaintiffs' motion and exception in respect to Finding 'XI' of the findings of fact on the ground of irrelevancy to the issues in this cause, since the patents therein enumerated are not anticipations of Woodbridge's invention or statutory bars to his right to a patent or evidence of forfeiture or abandonment, and since they do not establish intervening rights and were subsequent to the refusal of his patent.

13. The court erred in not sustaining plaintiffs' exception and motion with respect to Finding 'XII' of said findings of fact on the ground that a finding

of sixty-five hundredths (65/100) of a cent per pound would be a reasonable royalty for the use of the Woodbridge invention, since such finding does not afford as basis for a just compensation in equity and justice, as provided for by the act of Congress transmitting this claim to the Court of Claims, for the use of this invention by the United States during the emergency of the period of the Civil War.

14. The court erred in not sustaining plaintiffs' exception and motion to Finding 'XIV' of the findings of fact on the ground that such finding states a conclusion of law, namely, that of noninfringement, the determination of which question in this particular case wherein the material facts are not disputed is dependent solely upon the legal construction of claim 1 of the Woodbridge application.

15. Plaintiffs further assign as error that there are no facts to support the conclusion as set forth in said Finding 'XIV,' or that the facts are not sufficient to support said finding or conclusion.

16. The court erred in not holding as a conclusion of law that Woodbridge did not forfeit or abandon his right to a patent by publication, delay, laches or otherwise.

17. The court erred in not holding as a conclusion of law that the Woodbridge patent was wrongly refused to be issued by the Patent Office."

ARGUMENT.

The Terms of the Act.

The congressional history of the act is of importance. A bill like the act herein but without the proviso passed the Senate seven times and was approved by five committees of the House. Thorough consideration was given to the equities of the claim.

The language of the act itself is important in defining the period to be covered by the quasi patent and the consequent time during which the action or nonaction of the inventor as affecting the question of abandonment occurred. It is also important as defining the character of the right which the court must determine was abandoned or not abandoned.

In respect to the first clause of the act the court below has already found that Woodbridge was the original and first inventor of the invention and entitled to a patent therefor.

The first sentence of the second clause clearly implies that it was considered by Congress that the Government *had* used the invention. Then it fixes the term of the quasi patent to be granted by the Court of Claims, namely, for seventeen years from March 25, 1852. The end of this period was March 25, ~~1852~~ 1869. If the patent had been issued following Woodbridge's request of December 31, 1861, it would as a matter of established practice have been dated from the time of such issue. The objects of Congress in thus setting the beginning of the term of the property right may be deduced to have been, first, to prevent too long a postponement of the expiration of the term of the quasi patents; and, second,

make the ministerial act of issuing the patent coincide with the act of ordering to issue, on the theory of curing any possible question of the right of the Commissioner to retain the allowed application in the secret archives.

One clear and undoubted effect of the delimination of the term is to render unnecessary and to preclude consideration of any question of abandonment, laches, delay or refusal of the patent occurring after March 25, 1869, since it would be an obviously vain and foolish thing to consider possible abandonment of an invention already public property through expiration of the patent.

It may also be seriously considered whether all questions of abandonment, laches and failure to issue are not limited to conditions arising prior to March 25, 1852, and exclusive of conditions thereafter. It would seem logical that when Congress directed the court to consider the patent as issued on March 25, 1852, if then legally entitled to be issued, it meant to limit the questions of abandonment and wrongful failure or refusal to issue to conditions existing at that time. While this point would determine the issue of abandonment in plaintiffs' favor upon the position apparently advanced by the Court of Claims to the effect that the Commissioner had no authority to retain the application from issue, yet it is not at all necessary to plaintiffs' case, since it is their position that no evidence of abandonment up to January 4, 1862, has been produced and that the inventor was then still possessed of the right to a patent and that the Examiner in his action of January 29, 1862, was then wrong in refusing the patent.

The act, in the proviso, then says "the court must first be satisfied that Woodbridge did not forfeit or abandon his *right to a patent*, by publication, delay, laches or otherwise; and that said patent was wrongfully refused to be issued by the Patent Office."

The right to a patent is dependent upon capacity to comply with statutory requirements. Abandonment of the right to a patent means abandonment of the *invention*. There is a difference between abandonment of an invention and abandonment of an application for a patent. Under the present statutes an application may be expressly abandoned by the applicant or may become abandoned by operation of law through failure to prosecute within one year from an action by the Patent Office. But such abandonment does not work abandonment of the invention and if the inventor can comply with the statute he can file a new application for patent.

The Patent Office Examiner refused the patent on the ground of abandonment of the application. The court apparently grounded its adverse conclusion of law upon abandonment of the invention or abandonment of "his right to letters patent" (Rec., 35), although the greater part of the reasoning of the court is apparently directed to the point of abandonment of the application (Rec., 22, 34), and the opinion makes no reference whatever to the undisputed and incontestable fact that in 1862 Woodbridge was entitled to a patent under the statutes then in force and could have filed a new application and obtained such patent. There is certainly no finding of fact supporting or even relevant to the point of intention to abandon the invention or right to a patent. The gravamen of Woodbridge's offense in the eyes of the court is that he did not disclose to the public or the Government that he contemplated procuring a patent on his invention. (Rec., p. 28, line 1, p. 29, line 45, p. 35, line 30.) The principle thus advanced is *sui generis* in the law of patents.

ABANDONMENT EITHER OF THE RIGHT TO A PATENT OR OF THE APPLICATION IS NOT PROVED, IS NOT SUPPORTED BY THE FINDINGS OF FACT AND IN RESPECT TO THE RIGHT TO A PATENT THE FINDINGS ARE DIRECTLY OPPOSED TO SUCH CONCLUSION.

Abandonment is not to be presumed. It must be proved. Abandonment means intention to give up the right to obtain a patent.

Ide v. *Trorlicht et al.* 115 Fed. Rep. 53 C. C. A. 341.

McDuffie v. *Hestonville Ry. Co.*, 181 Fed. Rep. 503.

Mere lapse of time between the date of invention and the perfecting of the patent right is not evidence of intention to abandon.

(*Wood* v. *Cleveland Rolling Mill Co.* Fed. Case No. 17941.)

The findings establish that Woodbridge after inventing the device, disclosed the invention to the proper department of his only possible customer in times of peace, the United States Government. He caused through them, the invention to be reduced to practice, that is embodied in physical form capable of being used. It was tried under his direction. It was fully disclosed and discussed in the reports of two army officers to the Secretary of War. It was available for use by the Government. The reports were encouraging but did not recommend the adoption of the invention. The invention was of a radically new character, involving a complete revolution in the art of weapons of warfare, the change from round cannon balls to pointed cylindro shells and shot having the rifle motion and explosion thereof by percussion. In spite of the discouragement by the failure to

adopt the invention and in spite of the radical nature of his plan, Dr. Woodbridge persisted and filed his application for patent early in 1852. He then asserted his right to a patent in the only legal and proper way he could assert it. He did not tell the public or the Government he was going to file or had filed. No legal obligation rested upon him to do so and no legal benefit could result therefrom. There is no finding that the Government expected him to present the invention to it free of compensation.

His application for patent was rejected. He did not wait to reply and amend for two years and then successively at the end of two-year periods for thirteen years as did Berliner in the Berliner case, or eight years as did Simpson in the Colgate case, or indefinitely, as he might have done under the statutes and rules of practice then prevailing, but replied in seven days and to the next action in four days and the application was prosecuted to allowance and ordered to issue on March 25th, one month and fourteen days after filing. His right to a patent was established. He then requested that the actual issue and publication of the patent be delayed in order that he might not be barred from obtaining foreign patents. Publication prior to application was a bar in most countries and is to-day excepting under the special procedure now provided by the International Convention. It was and is a common legal and proper business procedure. Under the present practice, postponement of the issue of the patent is expressly permitted. Thus after the application is allowed, a period of six months is granted within which to pay the final Government fee and take out the patent. (Rev. St. Title LX, Sec. 4885.) At the end of the six-months period, the applicant may forfeit his application and then renew at any time within *two* years from the date of

allowance. (Rev. St. Sec. 4897.) He may then forfeit it again and again renew it and have it again allowed. So that under the statutes and decisions, a patentee today is expressly allow period of at least four years and six months for the postponement of the issue of his patent. In addition, under the present Rules of Practice (Edition of 1916, Rule 77) he is permitted a suspension of action on his apllication.

In the present case, the Court of Claims, although its "findings" do not find there was no authority, express or implied, in the Commissioner of Patents, to retain the allowed application in the secret archives, yet in its "Opinion" expresses the view that the action of the Commissioner was without authority of law, and this view of the case was evidently one of the grounds for reaching the conclusion of law adverse to the plaintiffs. (Rec., p. 30, line 17, p. 31, line 37, p. 35, line 4.)

The reply to the contention, if it be necessary to answer it, notwithstanding the lack of any finding thereon, is:

First, if Commissioner had no authority to retain the application, then he should have issued the patent at once.

Second, if the action was irregular the patent was then "wrongfully refused to be issued."

Third, if the action was irregular it was cured by the Act of Congress on which this action is based by fixing the date of the beginning of the quasi-patent on March 25, 1852, when it was "ordered to issue."

Fourth, it was done under authority of law, because of the implied authority of the Commissioner to establish a practice not inconsistent with the statutes and under the general authority of Section 1 of the Patent Act of 1836.

Fifth, although the practice was not embodied in a written or printed rule, it was an unwritten rule and a general practice as evidenced by the letter of Woodbridge of March 23, 1852, stating that information of this condition came from the Patent Office (Rec., 13), second, by the letter of the Examiner of January 29, 1862, not denying the practice, third, by the decision of the Board of Examiners-in-Chief (hereinafter printed in this brief) expressly recognizing the practice, and fourth, by reference to it in at least one suit in the Federal Courts.

Sixth, the court in discussing Section 8 of the Act of July 4, 1836, from the viewpoint of this section affording the basis for the suspension says, after quoting the section:

> "It is apparent that the terms of the foregoing statute do not authorize the secreting of applications for a patent *indefinitely.*" (Italics counsel's.)

But attention is called to the fact that Woodbridge in requesting the suspension of the issue, expressly stated: "If it is necessary to specify a particular time during which the patent shall remain in the secret archives, you will *please consider one year as the time designated by me.*" This is a direct compliance with the provisions of Section 8, quoted by the court.

It was the Commissioner, not Woodbridge, who agreed to hold it "indefinitely" when the former replied that the patent papers were filed "*subject to your directions as to the time of issuing the same.*" Woodbridge was evidently uncertain then, as are all of us now, as to the exact origin of or basis for the practice, but he brought his rights under the limitations of Section 8, if that was the basis. The Commissioner, however, drew the terms of the contract between the parties. And in justification of the attempt at repudiation of that contract the Court of

Claims, or any court, can cite no statute and no principle of law, whether patent law or any other kind.

However, the Court of Claims is probably in error in assuming that Section 8 of the Act of 1836 was considered as the basis for this practice. (Rec., 29.) That section related to the filing of applications, incomplete, because not accompanied by a model, as caveats. In the printed rules of the Patent Office in use in the fifties such section is reprinted in the rules under the heading "On filing the application as a caveat." See, also, opinion of Board of Examiners-in-Chief, hereinafter quoted.

Woodbridge's Conduct, Following the Order to Retain, up to December 31, 1861, *with Respect to the Question of Intention to Abandon His Invention or Right to a Patent.*

Following the postponement of the issue in conformity with Woodbridge's request and with the object that his ability to take out a foreign patent be not impaired, what did the inventor do that indicated his intention to abandon his invention to the public, and relinquish his expectation of its adoption, and compensation for its use under the property rights he secured by his patent? The burden of proof lies heavily upon the defendant to establish such intent by clear and affirmative evidence. *There is not a word in the findings of fact, supporting this defense.* On the contrary, they clearly and affirmatively support the opposite of the conclusion of law reached by the court.

In or about December, 1852, Dr. Woodbridge printed and published a pamphlet fully describing and illustrating his invention (Finding VIII, Rec., 20) and its operation, and quoting from the reports of the trials at Fort Monroe. By this pamphlet, he, for the second time, made

known to the Government, and to all officials thereof having power to influence its adoption, the nature and merits of his invention. He endeavored to educate and influence Army Officers and the public to an appreciation of the invention. He bombarded Congress repeatedly with his pamphlet (and also with petitions and interviews). But only the bombardment by the Confederate forces awoke the Government to the advantage of its use. These efforts continued from 1852 to 1861 as found by the Court of Claims. (Rec., 21.) The pamphlet was even placed in Woodbridge's patent application file. What more could he have done? The Government was his only customer. Demonstrations of the invention required a very large sum of money as stated by Col. Huger. Woodbridge by these efforts from 1852 to 1861 did everything in his power to make the invention available for the uses and needs of the Government and the protection of the country. The opposite of abandonment of an invention is introduction of it into public use. The Finding shows positively that Woodbridge did all he could do in meeting that requirement. What was the object of these efforts? The only common sense answer deducible from ordinary human conduct and human ~~nature~~ motives, is,—recognition and compensation. And, under the law, compensation could go only to a patentee since a patent established the only possible property right in a nonsecret invention.

But the point made by the Court of Claims against these efforts of Woodbridge, and the chief point of reliance for the conclusion of abandonment of his right to a patent, is that he did not state in this pamphlet that he had applied for a patent on the invention. (Rec., p. 21, line 6, p. 27, line 5 from bottom, p. 29, line 5, p. 29, line 21, p. 31, line 13, line 18, p. 34, line 19, line 29, p. 35, line

7, line 29, line 46, last line of page 35 and first three lines of page 36.)

This theory, as applied to the law of banadonment, is so novel, that it is difficult to answer it in the terms of statements of the law in adjudicated cases. If the Government had entered into the production and use of the invention and Woodbridge had stood idly by without attempting to assert and perfect his rights, the point would be pertinent. No such condition existed or is alleged to exist. However, an *explanation* of the reason why Dr. Woodbridge did not state in the pamphlet that he was the inventor or prospective patentee of the device, is that he was endeavoring to promote the introduction of the invention, and the recognition and compensation of the invention could come later. In direct reply to the point, Woodbridge had already informed the army officers and War Department in 1850 that he had invented the device and they recognized such fact in their reports. Moreover, the Government had constructive notice, as all are presumed to know the law and the Government must be presumed to have known that the inventor of the device, whoever he was, was entitled to apply for a patent thereon. The Government had to take the chance that every one does in making or using a new device, that a patent covering the same may issue upon a pending secret application. The Court of Claims states that our law does not recognize secret patents; the reply is made respectfully, that our law knows no such thing as a *public* application for patent.

DR. WOODBRIDGE'S REASONS FOR NOT ASKING FOR THE ISSUE OF HIS PATENT BEFORE DECEMBER 31, 1861.

The inventor's original purpose in postponement was preservation of ability to apply for foreign rights. At that time, he probably had reasonable hopes of inducing the Government to adopt his invention with reasonable promptness. When he met with no favorable response to his efforts of 1852 and 1853 he then decided to permit the application to remain in the Patent Office until there was a prospect of having it adopted and "rendered pecuniarily available to him" in order that the life of the patent might not be wasted before the world had grown up to the appreciation of his idea. This course was viewed with horror by counsel for the Government and was characterized as "lying in wait." Apparently the court below also considers such a motive reprehensible. If so, a very large proportion of the patents now in existence are invalid because of such condition. It is common practice for inventors, when their inventions are "ahead of their time" or when they are unable to immediately interest capital or when financial or eeconomic conditions are not ripe, to withhold the issuing of their patents to prevent undue waste of their terms. It is the exercise of proper, vigilant protection of his rights that any prudent man would adopt. The practice has been judicially sustained by this court in the Berliner case, and a striking example in the lower courts is the Selden case.

There was no injury to the Government in such course. The latter had not only not adopted the invention but in spite of the importunities of Woodbridge, had steadily refused to do so. He took the course of vigilance, of nonrelinquishment, of nonabandonment. Suppose that his patent had been issued in 1846, expiring in 1860 before

the beginning of the Civil War and then Woodbridge had asked for an extension of his patent and his claim had been referred to the Court of Claims. Would it not now be contended by the Government, that he was not entitled to an extension because he had been negligent in not protecting his rights by postponing the running of his patent term? It would have been said to him, "You need not have filed your application until there was a chance of having the invention adopted, or after filing your application, you could have abandoned it and later filed a new application. You were not vigilant in protecting your rights."

The almost insuperable obstacles that inventors outside of the Government meet with in attempts at the adoption of their inventions by the Government are of common knowledge. It is history that in the period immediately preceding the Civil War, the Government's officials, in respect to preparedness for war, were not only slumbering, but moribund. The court below has pictured the Government as an innocent victim of the patentee who lay in wait to spring upon it unsuspected. With whom are the equities? The Government, which in spite of two demonstrations of the invention, the complete disclosure of it to Congress and officers of the Government and the repeated importunities of the inventor and with full knowledge of his rights, deliberately and steadily rejected his invention when it considered it did not need it, and then, when an emergency arose, appropriated it; or the inventor who exploited the invention, made plain its advantages, persistently sought its adoption, and then was denied the fruits of his genius and efforts? The claimed ignorance of the origin of the invention by the Government and by subsequent improvement patentees and contractors, is im-

material as a matter of law, is unsupported by the evidence and is so extreme an assumption, in view of the wide publication of the invention, as to be incredible.

THERE WAS NO ESTOPPEL NO INTERVENING RIGHTS, AND NO STATUTORY BARS BETWEEN MARCH 25, 1852, AND DECEMBER 31, 1861.

The basis of abandonment where not express, is estoppel. There is no evidence or finding of any use of the invention by the Government or anyone else between March 25, 1852, and December 31, 1861. There were no intervening rights. There was no change of situation between the parties. If there were any applications filed in this period on which an interference with Woodbridge's pending application should have been declared by the Patent Office, such fact does not appear. And the sole knowledge of such applications and power to declare the interference rested with the Commissioner.

The court has included in its "findings" a general finding (No. X, Rec., 21) to the effect that during the pendency of the Woodbridge application, "a large number of improvements in projectiles was added to the art, among which were those disclosed by United States patents, as follows:" (followed by a list or 14 patents). The findings contain no other reference to these patents nor a statement of the ultimate fact, which they may be deemed to establish.

The only references to these patents in the opinion are on page 28 of the record, line 9; page 29, line 7 and page 35, line 10, where the Hotchkiss patents or one of them is referred to. They are not declared to constitute intervening rights and could not legally be so regarded.

It is certainly unnecessary for this court to analyze

each of these patents. It is sufficient to say as to their validity and scope that if their claims are drawn to the same invention as that of Woodbridge, they are void for anticipation both by the publication of Woodbridge's pamphlet and by Woodbridge's prior invention. If they are for distinct, subordinate improvements on Woodbridge's broad invention, then they were entitled to be patented and the issue of the Woodbridge patent prior to theirs could not have presented the issue of these specific improvement patents. Referring to the three Hotchkiss patents in the list, it will be seen that the latter condition exists. Each of the claims of each of these patents is directed to specific and distinct features not disclosed in the Woodbridge embodiment, although dominated by his broader claim. Woodbridge could not have made these claims of Hotchkiss and demanded an interference therewith. Of course, these patents could not confer upon Hotchkiss or the others the right to make, or sell, or use devices embodying the broad invention of Woodbridge without his consent. They merely gave these patentees the right to exclude others from making, using or selling embodiments of their particular inventions as covered by their specific claims.

Chicago & Alton Co. v. *Pressed Steel Car Co.* 243 Fed. p. 840, C. C. A.

Bloomer v. *McQuewan,* 14 How. 539, 548; 14 L. E. 532, 535.

Patterson v. *Kentucky,* 97 U. S. 501; 24 L. Ed. 1115.

Continental Paper Bag Co. v. *Eastern Paper Bag Co.* 210 U. S. 405; 52 L. Ed. 1122; 28 Sup. Ct. Rep. 748.

Crown Die & Tool Co. v. *Nye Tool and Machine Works,* U. S. Supreme Court, Oct. Term 1922; 67 L. Ed. 367, ... U. S. .....

Herman v. *Youngstown Co.* 191 Fed. 580.
Fuller v. *Berger,* 65 L. R. A. 381; 56 C. C. A. 588; 120 Fed. 274.
Swindell v. *Youngstown Sheet & Tube Co.* 230 Fed. 458.
Johnson v. *Cassman,* Fed. Case 7365, Vol. 13, Fed. Cases, p. 716.

See also *Wells & Hunter* v. *Honigmann* (District Columbia Court of Appeals, 1920, 280 O. G. 590; 267 Fed. Rep. 743), where it was held that the issue of a patent to others while Wells & Hunter's application, once allowed, lay forfeited in the Patent Office by failure to pay the final fee in time, did not work an abandonment. They did not constitute intervening rights.

As soon as Woodbridge learned of the prospective use by the Government of devices embodying his invention, which use if begun and continued was the only condition that could establish intervening rights, he *imemdiately demanded the issue of his patent.*

And no possible legal injury could have resulted to anyone from the issue of his patent at the time of his demand, because, he was still entitled at that time to a patent under the Statutes of 1836 and 1839. Following the refusal of the Examiner he could have filed a new application and there was nothing in the Statute to bar his patent. Thus Section 6 of the Patent Act of 1836, 5 Statutes at Large, 117, says:

"SECTION 6. And be it further enacted, That any person or persons, having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent,

in public use or on sale, with his consent or allowance, as the inventor or discoverer; and shall desire to obtain an exclusive property therein, may make application, in writing, to the Commissioner of Patents, expressing such desire, and the Commissioner, on due proceedings had, may grant a patent therefor."

Section 7 says—

"and if, on any such examination, it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country prior to the alleged invention or discovery thereof by the applicant, or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale with the applicant's consent or allowance prior to the application, if the Commissioner shall deem it to be sufficiently useful and important, it shall be his duty to issue a patent therefor. But whenever, on such examination, it shall appear to the Commissioner that the applicant was not the original and first inventor, or discoverer thereof, or that any part of that which is claimed as new had before been invented or discovered, or patented, or described in any printed publication in this or any foreign country, as aforesaid, or that the description is defective and insufficient, he shall notify the applicant thereof, giving him, briefly, such information and references as may be useful in judging of the propriety of renewing his application, or of altering his specification, to embrace only that part of the invention or discovery which is new."

See also Section 15.

None of the bars enumerated in these sections or in the Act of 1839 existed. If upon his new application the intermediate patents had been cited it would have been merely necessary under the Statute for Woodbridge to have shown that he had made his invention anterior to theirs.

This brings us to the Examiner's letter of refusal

dated January 29, 1862. If Woodbridge was entitled to a patent under the Statutes of 1836 on that date and the then pendency of his application was not inhibited by law then the issue of his patent was wrongfully refused by the Patent Office.

THE EXAMINER'S LETTER OF REFUSAL OF JANUARY 29, 1862.

Woodbridge was under no legal compulsion or obligation to ask for his patent within a certain time or before December 31, 1861, and he was entitled to rely upon the statement of the Commission that the application would be held "subject to his directions as to the time of issuing" the patent. The Patent Act of 1870 imposed a time limit of two years for actions by the applicant and the present statute limits the time to one year. But there was no time limit in the Act of 1836.

If the application was retained in the Office at the risk of the applicant what was that risk? First, that during the pendency others might manufacture or use some article embodying the invention covered by the claims. (*Woodbury Planing Machine Co.* v. *Keith,* 101 U. S. 479; U. S. Sup. Ct. Rep. 939; *U. S. Rifle & Cartridge Co.* v. *Whitney Arms Co.* 118 U. S. 53.) If such manufacture or use occurred it would be incumbent upon him to promptly ask for the issue of his patent. Second, if the Commisisoner notified him of an interfering application, it would be necessary for him to contest the issues and prove priority of conception and due diligence in reducing the invention to practical form.

But having established by diligent prosecution to official allowance by the Patent Office that he was entitled to a patent, there was no risk in mere lapse of time or delay in asking for the performance of the ministerial act of issuing the patent.

That there was no *legal* impediment to the issue of his patent in 1852 is clearly evidenced by the letter of Commissioner Halloway of January 4, 1862, replying to Woodbridge's request and stating that "your patent will be ordered to issue in pursuance of your request." That this was not a *pro forma* and unconsidered letter is indicated by the Commissioner's consideration of applicant's request for amendment of his specification.

Taking up the reasons advanced in the Examiner's letter of January 29, 1862, in refusing the issue, the Examiner alleges:

First, "the length of time you have permitted your invention to slumber is a bar to the grant of a patent at the present." An ignorance of the facts and an error of law. He had *not* permitted his *invention* to slumber but had strenuously and continuously kept it before the eyes of Congress and the public during the period the application was pending and had gone to West Point in 1861 in another effort to have it adopted.

Wrong in law because *mere* length of time could constitute no bar.

Second, the reference to Section 34 of the Printed Rules. A copy of this rule is not embodied in the Findings. It was to the effect that applications on which patents had been ordered to issue would not be retained in the secret archives for a longer period than one year. But it was not adopted until 1855 and could not be retroactive. If it had any bearing on the previously filed Woodbridge case, it was more binding on the Commissioner than on Woodbridge, and it was the former's duty alone to comply therewith.

Third, "you have suffered your application to remain locked up within the secret archives of this office—not merely beyond the reach of the public but beyond even

the conizance of the Examiners and other officers of this Department." This is pure nonsense. The only secret archives were the "confedential archives" referred to in Section 12 of the Act of 1836 relating to caveats and the "secret arhives" referred to in Section 8, relating to interfering applications and also to filing incomplete applications as caveats. Under both sections Woodbridge was entitled to notice of interfering applications, and the Examiners were obliged to be cognizant of pending applications to give such notice.

Fourth, the Britsih patents and one United States patent referred to. The same remarks apply to these patents as to those enumerated in Finding X. Moreover the devices of several of these patents are clearly not pertinent to Woodbridge's invention and not covered by his claim. As to Houghtin's United States patent, how or why was Woodbridge to take notice? It conveyed no right to make a certain thing; if new, it was valid, if the same as Woodbridge's, it was as effectively anticipated by his pamphlet as by his invention.

Fifth, "it is to the vigilant and not to the slumbering" etc. But it was the Government that had been slumbering.

Sixth, last and most important, the citation of Simpson's appeal to the Circuit Court of the District of Columbia.

Plaintiffs herein are entirely willing that their case shall be determined by rule of the Simpson case, as finally established. Such final decision was rendered by the eminent patent jurist, Mr. Justice Blatchford, in the celebrated case of *Colgate* v. *Western Union Telegraph Co.* 5 Fed. Cases, 85, which is hereinafter discussed and relied on in this brief.

Woodbridge then appealed to the Board of Examiners-

in-Chief and on July 10, 1862, the Board affirmed the refusal of the Examiner.

Their decision was not included in the findings by the court below, although plaintiffs moved that it be included, and excepted to the court's refusal to do so. It is important because it discloses that although it affirmed the decision of the Examiner, it rejected and disaffirmed his grounds and assigned another ground, *namely, public use of the invention.* And this ground was not only hearsay and unfounded in evidence, but a mistake of fact, as proved by a letter from the War Department to Woodbridge in evidence in the record below.

The decision of the board was by officers of the Government engaged in judicial duties and forms part of the Government records. It was promulgated by the Commissioner. Reference to it herein is therefore believed to be proper. The courts will take judicial notice of the records and actions of the heads of Departments and Bureaus of the Government.

York v. *Winans,* 17 How. 30; 15 L. Ed. 27.

Tower v. *U. S.* 21 Ct. Cl. 29.

Dorsey v. *Marsh,* 6 Fisher Pat. Cases, 394, Fed. Case No. 4014.

Laffan v. *U. S.* 122 Fed. 335.

Backas Steam Heater Co. v. *Simonds,* 2 App. D. C. 297.

The opinion of the board, including its decision is therefore printed in full as follows:

DECISION OF THE BOARD OF EXAMINERS-IN-CHIEF JULY 10, 1862.

"The alleged invention consists in applying to a projectile to be fired from a rifled cannon a ring or sabot of soft metal, for the purpose of giving to the projectile a rotary motion.

The iron projectile is made in ovoid form, and the rear section, from a point near the center to a point near the rear end, is surrounded by a soft-metal collar, cylindrical on its outer surface, but its inner surface fitting closely to the iron projectile.

The operation is thus described in the specification: 'A suitable charge of powder is to be introduced into the gun, and the ball and rifle ring placed in the position represented in fig. 1, the rear of the ball being in contact with the charge of powder. The surface of the rifle ring being exposed to the action of the gases formed by the inflammation of the powder, being much greater in proportion to its inertia than that of the ball, the ring is driven forcibly forward upon the ball so as to embrace it tightly and thus impart the rifle motion which itself has received from the grooves of the gun, and at the same time it is stretched to fill the bore of the gun completely, thus destroying the windage and causing the ball to advance strictly in the line of the axis of the bore.' The rear end of said ring, which is presented to the powder, is grooved so as to present thin edges of soft metal around the inner surface of the bore of the gun and the outer surface of the iron projectile, 'in order that the thin portions may act valvularly to prevent the escape of the gases between it and the sides of the bore and projectile.' In the drawings said soft-metal ring is represented as having projections to fit the grooves in the gun, and one of the claims is based upon said projections.

The first claim, however, is a broad one, to the use of the 'extensible metallic ring or sabot,' for the purposes above mentioned, without reference to the projections.

The application was originally filed Feb. 11th, 1852, and a patent was allowed and ordered to be issued on the 25th of March following. Two days previously to the allowance of a patent the applicant wrote to the office, requesting that upon the issue or order to issue of a patent it might be filed in the secret archives of the office, in order that his ability to take out a patent in a foreign country might not be affected by the publication of the invention, and stating that if it was necessary to specify a par-

ticular time during which the patent should remain in the secret archives the Commissioner would please consider one year as the time designated by him. To this letter the office replied on the 15th of April, 1852, informing the applicant that a patent had been ordered to issue on his application, and that in accordance with his request the papers had been filed among the secret archives of the office subject to his directions as to the time of issuing the same.

Here the matter rested until the 31st December, 1861, when the applicant addressed a letter to the office calling attention to the case, requesting leave to amend his specification, if permissible, and if not, the immediate issue of the patent without amendment. In answer to this application the examiner in charge informed the applicant that the length of time he had allowed his invention to slumber was a bar to the grant of a patent, referring to the 34th section of the printed rules, which prescribes that 'no application upon which a patent has been ordered to issue shall be retained in the secret archives more than six months from the day on which the patent was ordered to issue,' and alleging that the applicant had for nearly ten years, contrary to said rule, suffered his application to be locked up in the secret archives, not merely beyond the reach of the public, but beyond even the cognizance of the examiners and other officers of the patent department. The examiner also alleged that in the meantime various patents embracing the same invention have been issued in England and published for years in this country, referring in this connection to the English patents of C. C. Minie, May 31, of 1854; of A. E. L. C. Timmerhaus, of 1855, and of A. V. Newton, of 1856. He also alleged that the American patent of L. Houghton, of April 3, 1855, for the same device, had been for more than six years before the public.

The 34th section of the printed rules, to which the examiner refers, does not appear to have been in force at the time when this application was ordered to be deposited in the secret archives of the Patent Office. Even if it had been in force at that time, by permitting his application to remain in the

secret archives longer than six months the applicant would not necessarily have forfeited his right to a patent. When a patent has been ordered to issue, and the applicant requests, pursuant to this rule, that the application shall be deposited in the secret archives, it becomes the duty of the office, at the expiration of six months, to issue the patent if no further act is required to be done by the applicant to entitle him to the patent. But after the expiration of the time limited by the rule, if not before, the applicant abstains from taking out a patent at his own peril. If there were no rule limiting the time which such an application might be permitted to remain in the secret archives, we think it clear that it would remain there at the risk of the applicant from the time of its deposit at his request. What the exact character and extent of this risk might be under all circumstances it is unnecessary here to determine. It may be safely assumed, however, that an applicant for a patent, after it has been ordered to issue, is no more secure against the forfeiture of his rights while his application is lying in the secret archives of the Patent Office than he would be if his patent had actually issued and had passed into his possession.

A patentee with a patent in his possession may forfeit all his rights under it by permitting his invention to go into public use without objection or claim on his part. Judge Story, in *Wyeth et al.* v. *Stone et al.* (3rd Sto. 282), says: 'I agree that it is quite competent for a patentee at any time, by overt acts or by express dedication, to abandon or surrender to the public for their use all the rights secured by his patent, if such is his pleasure, clearly and deliberately expressed. So, if for a series of years the patentee acquiesces without objection in the known public use by others of his invention, or stands by and encourages such use, such conduct will afford a very strong presumption of such an actual abandonment or surrender.' Here the doctrine is clearly recognized by Judge Story that mere acquiescence by a patentee in the known public use of his invention by others may amount to evidence of the abandonment or surrender of his invention to

the public. Undoubtedly the evidence of such acquiescence, and for a considerable length of time, ought to be very clear to justify a presumption of abandonment. In fact, all the circumstances of the case ought to be such as can not reasonably be reconciled, consistently with the good faith of the patentee towards the public, with any other hypothesis than that of his intention to abandon or surrender to the public all rights guaranteed by his patent.

Tried by this test, how does the case now before us stand? The applicant applied for a patent in February, 1852, and on the 25th of March following his claim was allowed. No further act was required of him, and no further expense was necessary, to obtain his letters patent duly authenticated. At his own request, however, his application was deposited in the secret archives of the office, and there permitted to remain for nearly ten years. In the meantime the attention of foreign nations, as well as our own, has been constantly directed to the subject embraced in the application. Seldom during any period in the history of the world has any subject connection with the science of war attracted more attention and been productive of more experiments than the subject of making suitable projectiles for rifled cannon has during the very time that this application has been lying in the secret archives of the Patent Office. In these experiments the principle of the applicant's invention has been applied over and over again, and a number of patents have been granted in this country and in Europe for projectiles constructed and operating on precisely the same principle. Many of these experiments in which this principle has been tested have been publicly conducted by the Ordnance Department of this Government, and the results of them are matters of record in that Department.

The examiner has referred to only one American patent embracing the principle of the invention under consideration, viz., that of L. Houghton, of April 3, 1855. In this case a leaden sabot with a cavity corresponding in form to the hemispherical rear end of an elongated iron shot is forced forward by the explosive force of the powder upon the said rear end

of the iron shot, and thereby expanded so as to fill the grooves of the barrel. The claim allowed him is: 'The employment of a deep sabot at the base of the projectile, so as to be driven thereon, into the grooves of the gun, at the moment of the discharge, for rendering said grooves effective in producing the rotation of the projectile as specified.' It will be seen that this claim covers the identical principle embraced in the first claim allowed to the appellant, in 1852.

On the 13th of November, 1855, a patent (not referred to by the examiners) was issued to Sylvanus Sawyer, for a projectile with a leaden or soft metal sabot on its rear conical end, so that, in his own language, 'the force of the explosion acting in conjunction with the hard metal at the butt or rear end of the shell shall expand a portion of such anti-friction (soft) metal so as to press it firmly against the inner surface of the bore of the piece and cut off the passage of the flame by the shell or its leaden or anti-friction coating.'

Among other claims allowed him in the following: 'I also claim making the rear part of the shell tapering or conical as seen at a, a, combining therewith a ring or annulus b, b, of lead or its equivalent, the same being substantially in manner and for the purpose as hereinbefore specified.' It will be seen that this claim, also, covers the identical principle embraced in the first claim of the appellant. And this shot of Sawyer, it is said, was publicly tested by the Ordnance Department shortly after the allowance of his patent, and a report made thereon, which is matter of record in said Department.

On the 6th of August, 1861, a patent (not referred to by the examiner) was issued to Capt. John A. Dahlgren for a shot with a leaden sabot at its base, constructed and operating on the same general principle. In his specification Capt. Dahlgren says: 'When the projectile is discharged from a rifled gun, the force of the explosion of the powder first drives the soft bottom forward upon the conical or spherical rear end of the body of the projectile, which has the effect of compressing or wedging out the periphery of the soft metal bottom into close contact with the

rifled surface of the bore, filling the rifle grooves with the soft metal so as to prevent windage and compel the projectile in passing through the bore to rotate on its own axis, like a screw in the rifle grooves.'

The same principle has been claimed in several other applications which have been rejected, and perhaps is embraced in others which have been allowed. At all events, the principle upon which the first claim of the appellant is based is clearly embraced in all three of the patents above specially referred to, two of which patents have been in existence more than five years of the time during which appellant's application was quietly sleeping in the secret archives of the Patent Office.

It should be here remarked that the device covered by the second claim of appellant is also found in the patent of Sawyer, above referred to, as well as in several applications not referred to.

How the same device came to be patented, successively, to Houghton, Sawyer, and Dahlgren, is a mystery which we shall not attempt to explain. Indeed, we can not explain how it came to be patented to any one of them, in view of the previous application of Woodbridge, and the action of the office thereon, and the publicity which was given to his invention in 1852. We have before us in Woodbridge's file a printed pamphlet, published by him in 1852, giving a full description of his invention, amply illustrated by drawings, with an account in detail of experiments made with the shot at Fortress Monroe, by permission of the Secretary of War in 1850. This pamphlet, we are informed, was circulated quite extensively among members of Congress and other officers of the Government at the time of its publication.

However derelict the office may have been in patenting the same invention over and over again to different applicants, its dereliction in this respect does not help the case of the applicant now before us. It rather leaves him less excuse for his gross neglect in failing to take out his patent, if he ever intended to do so.

It may be alleged that, although several patents have been granted for the same invention, it does not necessarily follow that the invention has ever gone into public use. But we have already adverted to the fact that public experiments to test the principle of the invention have frequently been made by the Ordnance Department. Experimental use is the only use to which military inventions can be applied in time of peace; and we think that when an inventor succeeds in getting the Government in time of peace to make a public experimental use of his invention he has succeeded in introducing it to public use, in the sense in which that term is used in patent law. The appellant is presumed to have had a knowledge at least of the experiments publicly made under the auspices of the War Department officially reported upon and noticed in the records of the Department. If the appellant had taken out his patent at the time of its allowance, it would now have less than four years to run. If the patent is now issued it will have seventeen years to run. If an inventor after perfecting his application and procuring the allowance of his patent can, by delaying to take it out, wait until others have so introduced the invention to the public use and tested its practicability that it has actually become a public necessity, and then, by taking out his patent, secure the exclusive use of the invention for a full term from that date, he can take an advantage of the public which it is scarcely to be presumed it was the intention of the legislature to give him. If a patent could now be issued to the appellant for the remainder of the term which it would now have to run, if it had been issued at the time of its allowance, there would perhaps be no injustice in so issuing it. But to give him the exclusive privilege of using the invention for seventeen years from this date is so manifestly unjust toward the public that nothing short of a strict legal right to it, free from all reasonable doubt, would warrant the office in complying with his pending demand.

We do not base our objection to the issuing of the patent upon the ground of injustice to the subse-

quent patentees of the same invention. It appears to us that all such patents issued subsequent to the allowance of appellant's application and the publication of the printed pamphlet above referred to, in so far as they are based upon the same invention therein described, are necessarily null and void. But the public have rights which it is no less our duty to guard than the rights of individuals.

Under all the circumstances of the case, even if the patent had been issued at the time of its allowance, and the patentee had acquiesced, as he has done, in the use of the invention by others without setting up any claim under his patent, it is doubtful whether the courts would not hold, in pursuance of the doctrine laid down by Judge Story in *Wyeth* v. *Stone*, that his acts would raise a fair presumption of an abandonment or surrender of his rights to the public. But where an applicant for a patent, after prosecuting his claim to an allowance, refuses or fails for a series of years to take out his patent and acquiesces in the use of the invention by others, without interposing any objection or setting up any claim, the presumption of abandonment certainly becomes much stronger than in a case where the patent has been taken out.

It appears to us that the conduct of the appellant in this case has been such as to raise a strong presumption of a voluntary abandonment and surrender to the public of any rights which he might have secured by taking out his patent. There is only one other construction which we can reasonably put uopn his conduct; and that is, that he deliberately intended to take an undue advantage of the public by lying in wait until others should have, by a long series of experiments, demonstrated the utility of his invention, and then come in and secure a monopoly of its use for the full term of the life of a patent afterwards. We will not presume, however, that he intended to act in bad faith towards the public, when his conduct is equally reconcilable with an hypothesis perfectly consistent with his innocence and good faith.

It is therefore considered by the examiners in

chief that there is no error in the decision of the examiner, and the same is affirmed.

J. J. COOMBS,
J. H. HODGES,
T. C. THEAKER,
Examiners in Chief.

United States Patent Office,
July 15, 1862.

Sir: Your application for a patent for improvement in projectiles has been considered by the examiners in chief upon appeal, and they affirm the former action of the office, and decide that the application should be refused.

Respectfully, etc.,

.....
Commissioner of Patents, G. H. C. No. 1.

Wm. E. Woodbridge,
Perth Amboy, Middlesex Co., N. J."

In this opinion it will be seen that the Board recognizes the practice of placing the allowed application in the secret archives; rejected the citation of Rule 34 by the Examiner; held that the intermediate patents did not constitute intervening rights; that if Woodbridge's patent could have been dated from March 25, 1852 there would probably be no injustice in so issuing it (precisely what Congress has provided in the Woodbridge Act) but held that the invention had been in public use in the intervening period. This is the only reasonable ground set up for refusal in the two decisions. If true it might have an important bearing on the questions of estoppel and intervening rights. Although, to make it controlling it must have been shown that Woodbridge *acquiesced* in the use, expressly or implied by *Shaw* v. *Cooper*, 7 Peters. But the statement was *ex parte*, hearsay and unsupported by evidence. The erroneous impression or information of the Board is contradicted by letters from the Chiefs of Ordnance

of the War and Navy Departments in the record below stating that in respect to some of the alleged instances of use referred to by the Board, they were non-existent and as to the others they were purely experimental, and secret.

It is believed that it has been positively shown that under the facts and the law Woodbridge had not abandoned his invention or his application and the Patent Office was wrong in refusing his patent.

Discussion of Authorities Cited by the Court of Claims and Those Relied Upon by Plaintiffs on the Question of Abandonment.

The cases referred to by the Court in support of its position are as follows:

Woodbury Planing Machine Co. v. *Keith,* 101 U. S. 479, 488.

Egbert v. *Lippmann,* 104 U. S. 333.

Kendall v. *Winsor,* 21 How. 322.

In the *Woodbury Planing Machine* case, Woodbury filed his application June 3, 1848. It was rejected in 1849. In 1852 his attorney withdrew the application and the fee. In December 1870, 21 years after the rejection, Woodbury "renewed" his application. In 1854 and from then on planing machines containing his invention "was general," and many thousands of such machines were sold. The Supreme Court said:

> "This fact must have been known to him. Upon this subject the evidence is very full."

The Court in further referring to Woodbury's inaction and delay after this knowledge, said:

> "They spoke plainly of *acquiescence* in the rejection of his application for a patent."

And again:

> "If Woodbury did not intend to acquiesce in the rejection of his application, the rule was no bar to a movement by him to have it reinstated after its withdrawal. So he might have applied for a re-examination, or he might have appealed, or might have filed a new one. Thus he would have given notice that he did not intend to give up his invention to the public."

In the present case, the application was diligently prosecuted over rejections to an allowance; there was no acquiescence in any rejection; no manufacture or sale by others, no intervening rights, and no necessity to give any notice or to take similar action because Woodbridge was relying upon the statement of the office to hold the patent subject to his directions as to time of issue, while in the meantime, he was diligently endeavoring to make the invention pecuniarily available to him before the term of the patent ran out.

Egbert v. *Lippmann*, 104 U. S. 333, was a question of public use for more than two years prior to application with the consent and allowance of the inventor. He made the invention in 1855 and did not apply until 1866 and in the *meanwhile* "the invention had found its way into general and almost universal use." The court held that the patentee knew of this use.

This case in its facts and law clearly has no bearing on the present case.

Kendall v. *Winsor* was a case of a concealed invention, where the inventor first endeavored to protect his invention under the common law right to secret inventions and after a long period of such secrecy obtained a patent. The inventor had repeatedly declared that he did not intend to take out a patent but to rely upon secrecy. He invented the machine in 1846 and did not apply until 1854 and in the *meanwhile* the defendants

had learned of the machine and had copied. It was held that the evidence was sufficient to justify the conclusion that he "intended not to take out a patent."

That is not the present case. There was no secrecy on the part of Woodbridge, no "attempt to withhold the benefit of his improvement from the public until a similar or the same improvement should have been made and introduced by others." He disclosed it to the Government and proved its merit, and then disclosed it to the public. He fought for eleven years to have it adopted by the Government for the benefit and protection of the country.

In *United States Rifle & Cartridge Co.* v. *Whitney*, 118 U. S. 53, referred to by counsel for defendants, Cochran filed on January 10, 1859, was rejected February 8, 1859, withdrew his application and fee on February 20, 1860, and did not file again until May 6, 1868. In the meanwhile Cochran obtained twenty-two other patents relating to other inventions made by him. In this interval also eighteen patents were granted to others relating to similar devices and *the defendants had* manufactured under them. Here were intervening rights. In discussing abandonment, the court said:

> "There may be an abandonment of an invention to the public, as well after an application has been rejected or withdrawn, as before any application is made. Such abandonment may be proved, either by express declarations of an intention to abandon, or by conduct inconsistent with any other conclusion. An inventor whose application for patent has been rejected, and who, without substantial reason or excuse, omits for many years to take any step to reinstate or renew it, must be held to have acquiesced in its rejection, and to have abandoned any intention of further prosecuting his claim."

In the Woodbridge case there was no intervening manufacture or sale, no rejection and no acquiescence in

such rejection. In the Rifle Co. case the defendants had acquired equities, while at the same time, Cochran prosecuted numerous other applications and was constantly occupied in bringing to the attention of the War Department and the public other inventions of his *but never presented to them* the one in controversy.

Plaintiffs' Authorities.

The court below is correct in stating that plaintiffs rely upon *Colgate* v. *Western Union Telegraph Co.* 6 Fed. Cases, page 85, and *Smith* v. *Goodyear Dental Vulvanite Co.* 93 U. S. 486, 23 L. Ed. 952. But it omitted to mention or distinguish from the other case principally relied upon by plaintiffs, namely, *United States* v. *American Bell Telephone Co. and Emil Berliner,* 167 U. S. 226, 42 L. Ed. 144.

These cases have particular relation to the question of lapse of time between the allowance and request to issue the Woodbridge patent.

In the Colgate case, Simpson was the patentee whose application had been denied by Judge Dunlap in the case referred to and relied upon by the Examiner in his letter of refusal. The patent was subsequently granted and was adjudicated in the Colgate case.

Simpson's Case.

The two cases are parallel. In both cases the parties were brilliant inventors, and their respective inventions were of great public importance, and in both cases the utilization of the invention was limited to a narrow field of customers. Simpson's invention comprised a submarine telegraph cable consisting of a metallic wire encased in gutta percha. His invention made the sub-

marine cable successful. His application was filed January 31, 1848, and his patent was not issued until May 21, 1867. The period thus covered by the history of his application embraced that within which the Woodbridge case was pending.

The final adjudication of his rights was by Mr. Justice Blatchford (then Circuit Judge), the ablest and most experienced patent jurist of his time. This adjudication was in the case of *Colgate* v. *Western Union Telegraph Company,* 6 Fed. Cases, page 85, Case No. 2995, 15 Blatchf. 365, 4 Bann. & A. 36, 14 O. G. 943.

Simpson made his invention in 1846 or in 1847, and on January 31, 1848, he filed an application for patent but without any fee or model. On February 21, 1848, he filed another application. On April 2, 1849, he filed a new application with a drawing and model and fee. In 1849 the Patent Office finally rejected his application on the ground that the invention was disclosed in the applications of other parties. Simpson, like Woodbridge, personally conducted the prosecution of his application. On January 21, 1851, he requested the return of twenty dollars, his fee, as permitted by law. The application was not otherwise withdrawn. "He did not make any further communication to the Patent Office until November, 1858, nor did he renew his application for a patent until the 24th of December, 1858." In the interval he had an interview with the Commissioner of Patents, in 1853, in regard to his rejected application. On December 24, 1858, he filed a new application. On December 29, 1858, his application was rejected on the ground that insulating electrodes in gutta percha was well known and that the journals of France, England and this country for several years back fully treated the subject. In reply, Simpson made affidavit to the

fact that he had made the invention as early as November, 1847. Thereupon, the Patent Office rejected his application on the ground that the invention had been "abandoned to the public." Simpson replied to this rejection with an argument and the case was referred by appeal or assignment to the Board of Examiners in Chief or three officials in the Patent Office, who rendered a decision on January 22, 1859. This decision is quoted on page 93 of the Colgate case and is almost identical in its language and in its grounds of rejection with the decision of the Board in the Woodbridge case. It was alleged that the invention had been in public use during the pendency of his application and "that the fact that he has suffered for more than seven years (from January 21, 1851, to November 15, 1858), said invention so to be used without taking any steps to prosecute his claim to a patent, in law constitutes such use as having been made with his consent and allowance, thus, by his own act, working an abandonment of his invention to the public."

The recommended the final rejection of his application on February 2, 1859. This report was confirmed by the Commissioner of Patents. On October 8, 1859, he made another application for patent, accompanying it with an argument. On November 26, 1859, the Patent Office wrote him a letter admitting "there do not appear to have been just grounds for the rejection of your application, as per official letter of 1849, and, therefore, the patent * * * had the matter been pressed to a final decision then, * * * would have been granted, it is believed." But the Patent Office then again held to its position that the invention had been abandoned, and in 1860 the case being referred to a board of three in the Patent Office this refusal was again confirmed and in 1860 the Commissioner confirmed this report. In 1861,

he appealed to the Circuit Court of the United States for the District of Columbia, and the Commissioner's decision was affirmed by Judge Dunlop in the "case of Simpson" relied upon by defendant.

"During the years 1861, 1862, 1863, 1864 and 1865, Simpson was persistent in urging his application upon the attention of the then Commissioner of Patents, both personally and by letter." (p. 94.) "He also applied to Congress for relief," asking that a patent be ordered to issue for his invention, but such relief was not granted, although passed by the House.

On May 4, 1866, "Simpson filed the application on which the patent was granted." On August 15, 1866, the Patent Office again refused the patent on the ground that it was not competent for it to go behind the decision of Judge Dunlop. On appeal to the Examiners in Chief, the decision was affirmed on April 9, 1867.

The application was then examined by Mr. Hedrick, an Examiner in the Patent Office, who on the 7th day of May, 1867, made the following report to the Commissioner of Patents:

> "I have examined the arguments and papers in the application of George B. Simpson, for improved insulator for submarine and other telegraphic lines. I have especially examined the question of novelty at the time of the first application to the office, and find that the invention was then new, and was sufficiently important to entitle the applicant to a patent. I have also examined the papers submitted by the inventor to show that he never abandoned his claim, and only withdrew his application under protest, and that, therefore, nothing more than constructive abandonment can be made out against him. The whole case is a very extraordinary one. There seems to be no doubt, that the invention was one that deserved a patent, and that the inventor did what should have entitled him to a patent, and the office has, at various times, held that opinion, but

has always, either from mistake as to the character of the invention, as in the first instance, or from the idea that there was a constructive abandonment, refused it to him, whilst the inventor has at all times, and against all adverse opinions from official and unofficial quarters, asserted that he was entitled to and should receive a patent for his invention. This has been continued for nearly twenty years, until the invention is in general use and the public acting in the belief that the invention is public property."

Following this report to the Commissioner of Patents the patent was on the 10th day of May, 1867, ordered to issue and was issued on May 21, 1867. Simpson died in October, 1867.

The court, after relating this history of Simpson's application, says,—and the opinion of the court is hereby quoted *in extenso*, since it cites practically all the other authorities bearing upon this point and existing at that time, particularly the leading Supreme Court case of *Smith* v. *Goodyear Dental Vulcanite Company*, upon which plaintiffs herein also rely and to which the particular attention of this court is invited:

"Nor is there any evidence of any affirmative abandonment of his invention, betweeen October, 1849, and December, 1858. There is nothing but the lapse of time. As to that, the evidence shows that he was poor, during all that time. He might have taken an appeal from the decision of October, 1849, but the treatment he had received from the Patent Office, afterwards acknowledged by it to have been wrong and unjust, and the array of distinguished names in telegraphy, presented by the office to discourage him, with statements showing how greatly the office relied on information received from them, might well have deterred him from entering, at the time, on a further contest. The evidence shows, that, from 1849 to 1858, he was always poor; that he went to the Pacific Coast to better his pecuniary condition; and that he worked his way out there. Under all the circumstances, his application of 1858

must be considered, not as a new application, but as a continuation of his prior applications; and so must his applications of 1859 and 1866. From 1858 to 1866, the efforts of Simpson to procure the allowance of his claim to a patent were continuous and persistent, and no laches can be imputed to him, nor is any ground shown for holding that he abandoned his invention after 1858.

In *Adams* v. *Jones* (Case No. 57), Mr. Justice Grier says, that, by the application filed in the Patent Office, the inventor makes a full disclosure of his invention, and gives public notice of his claim for a patent; and that the delay afterward interposed by the mistakes or obtuseness of public officers, where gross laches cannot be imputed to the applicant, can not affect his right. In that case, an application was made in 1850, and was never withdrawn, and the patent was granted in 1857, and was sustained.

The case of *Dental Vulcanite Co.* v. *Weatherbee* (Case No. 3,810) was decided by Mr. Justice Clifford, on the Cummings patent of 1864, reissued twice in 1865. The first application was made in 1855, and it was, after three examinations, finally rejected on appeal, by the commissioner of patents, in 1856. It was not further appealed, and was not renewed till 1864, when a new application was filed, on which the patent was issued. In the interval between the filing of the original application and that of 1864, the invention had gone into use to a considerable extent, with the knowledge and consent of the applicant. There was no withdrawal of the application, and no evidence of an intent to abandon the invention, except inference from the above facts. It was urged in opposition to the validity of the patent, that Cummings had abandoned his invention, because, after the rejection of his application in 1856, he did not appeal or apply anew until 1864. In deciding on this point, Mr. Justice Clifford says: 'Strong doubts are entertained whether any new application was necessary; but, if it was, it is believed to be well settled, that the second application must be regarded as having been filed in aid of the first, on which the rejection

took place. *Godfrey* v. *Eames*, 1 Wall. (68 U. S.) 317. Actual abandonment is not satisfactorily proved.' The patent was sustained. The same judge made a like ruling on the same patent in *Goodyear Dental Vulcanite Co.* v. *Gardiner* (Case No. 5,591), and so did Judge Shepley, in *Goodyear Dental Vulcanite Co.* v. *Smith* (Id. 5,598), and Mr. Justice Hunt, in *Goodyear Dental Vulcanite Co.* v. *Root* (Id. 5,597), and Judge Emmons, in *Goodyear Dental Vulcanite Co.* v. *Willis* (Id. 5,603). The Supreme Court of the United States, in *Smith* v. *Goodyear Dental Vulcanite Co.* 93 U. S. 486, sustained the Cummings patent against the same objection, holding that the application of 1864 was to be regarded as a continuation of the application of 1855. The case of Cummings was, in all substantial features, like the present case. He did not withdraw any part of the fee originally paid, but it has been shown, that withdrawing part of the fee, in the case of Simpson, is not to be regarded as a withdrawal of the application. The whole matter is summed up by Mr. Justice Strong, in delivering the opinion of the court, in the case last cited, in these words: 'We are not aware that filing a second petition for a patent, after the first has been rejected, has ever been regarded as severing the second application from the first, and depriving the applicant of any advantage he would have enjoyed had the patent been granted without a renewal of the application. The contrary was decided by the Circuit Court for the Southern District of Ohio, in *Bell* v. *Daniels* (Case No. 1,247), and in *Blandy* v. *Griffith* (Id. 1,529); and these decisions are founded in justice and sound reason.' It was proved, in the Cummings case, that, between the rejection of 1856 and the application of 1864, his invention had come into general public use. In the present case, there is no proof that any use in public of Simpson's invention was at any time made with his consent, allowance, or acquiescence.

In the case of *Johnson* v. *Fassman* (Case No. 7,365), an application made in 1856 was rejected in 1857, for want of novelty. The applicant took no further steps till 1866, when he took an appeal,

which resulted in the granting of a patent. Meantime, patents for substantially the same invention were issued to other inventors. During four of the nine years the applicant was a citizen of a state in rebellion. There was no withdrawal of his application. It was held that no direct or implied abandonment was shown.

In *McMillin* v. *Barclay* (Case No. 8,902), an application was made in 1855, and was finally rejected in 1856, on appeal to the commissioner of patents. It was not withdrawn, but nothing more was done in regard to it until 1867, when the specification was amended, and, on further consideration, a patent was granted. Judge McKennan held that there was no abandonment, express or implied, and that the lapse of time was satisfactorily explained.

In *Bevin* v. *East Hampton Bell Co.* (Case No. 1,379), an application was made in 1852 and rejected two months afterwards. The next month the applicant took from the patent office his application and all the papers connected with it, except one drawing, but made no formal withdrawal. He never returned those papers. For ten years he did nothing more. During that time the invention went into open and notorious use, in his own neighborhood and under his own eyes, and so continued for ten years, without remonstrance from him. He was not poor, and was engaged in a successful business. In 1862 he made a new application, and a patent was granted in 1869. It was held that he had abandoned his application of 1852. Great stress was laid by the court on the fact of the taking of all the papers from the patent office, and withholding them, and on the fact of such use of the invention, and on the fact of the absence of poverty. The present case differs from the Bevin case in the particulars just referred to.

The case of *Marsh* v. *Sayles* (Case No. 9,119) holds, that, where an application was rejected, and twenty dollars of the fee was refunded, and then there was a delay of eighteen years before the application was renewed, and no attempt is made to explain the delay, it will be held that there was an abandonment of the invention to the public. That is not the present case.

In *Consolidated Fruit Jar Co.* v. *Wright*, 94 U. S. 92, the invention was completed in 1859, and no application was made for a patent till 1868. It was held that the facts showed abandonment before the application. No sufficient reason for the delay was given. There was no proof of want of pecuniary means, and there was proof of use by the public for more than two years before the application. The case is unlike that of Simpson.

In *United States Rifle Co.* v. *Whitney Arms Co.* (Case No. 16,793), the answer is set up, as a defense, that the patent was applied for in 1868, and that the invention had for more than two years before that date been in public use and on sale with the consent and allowance of the inventor, Cochran, and that, prior to that date, it had been abandoned to the public. Cochran applied for a patent for the invention, an improvement in breech-loading guns, in 1859. It was rejected within a month. He took no appeal from the rejection by the primary examiner, and, one year and twelve days after the rejection he withdrew the application and received a refund of $20. In 1868, he filed a new application, which was rejected on the ground of abandonment. The commissioner affirmed such decision, but it was reversed by the Supreme Court of the District of Columbia. The commissioner then declined to issue the patent, but, after the passage of the Patent Act of 1870 (16 Stat. 198), a new application was filed, and a patent was issued. During the eight years from 1860 to 1868, Cochran obtained 22 different patent, on his own application, 9 of which related to breech-loading firearms. He prosecuted his other inventions with constancy and energy. The court held, that no poverty was shown as a reason for not renewing and pressing his application; and that, if it were, it would tend greatly to dispel the idea of laches. Stress was laid in that case, by the court, on the withdrawal of the application, and the patent was held to be invalid. The decision in that case is not of weight in reference to the facts of Simpson's case.

On all the points in issue, it must be held, that the plaintiff has established his case, and there must be the usual decree for the plaintiff, for an injunction and an account, with costs."

Following this adjudication by Judge Blatchford a compromise was entered into between Colgate and the Western Union Telegraph Company whereby the latter paid Colgate one hundred thousand dollars for a release and license, according to the note in Fed. Cases.

The case of *Colgate* v. *Western Union Telegraph Co. supra,* and *Smith* v. *Goodyear Dental Vulcanite Co.* 93 U. S. 486, 23 Law Ed. 592 (see that part of the court's opinion on page 956) are conclusive in favor of the plaintiffs herein upon the point that he did not abandon or forfeit his right to a patent and that said patent was wrongly refused to be issued.

The reason why the Patent Office went wrong on this point in the Woodbridge case was probably owing to that fact that the law as to abandonment, particularly in respect to the point that abandonment cannot be presumed but must be proved, and involves the element of dedication to the public and rests upon the principle of equitable estoppel, had not been fully expanded and established by the courts at the time of the refusal of the Woodbridge patent. This unsettled condition of the law on this point is adverted to in several patent opinions in Federal cases.

The Berliner Case.

In the case of the *United States* v. *American Bell Telephone Company and Emile Berliner* (167 U. S. p. 226, 42 Law Ed. 144), suit was brought by the United States to cancel and set aside the Berliner Telephone patent on the ground of undue and fraudulent delay in the prosecution and issue of the patent on the application. The application had been pending in the Patent Office for a period of thirteen years. The Government contended (synopsis of argument in report):

"That the delay of the application in the office

for thirteen years was, under the circumstances alleged in the bill, unlawful and fraudulent. * * * The delay in the office is the great fact in the case. It determined the bringing of the suit, stands in the forefront of the bill, was the principal question argued in both courts below, and occupies the chief space in the decisions rendered. It is not set up as laches, nor as a ground of forfeiture under any provision of the law or rule of the Patent Office, but as a course of conduct in the nature of fraud on the public."

In the first sentence of the opinion of the court (by Mr. Justice Brewer) it is said:

"This is a suit by the United States to set aside a patent for an invention as *wrongfully issued.*"

The Berliner case would thus be the same as the Woodbridge case if the Woodbridge patent had been actually issued in 1862, and then the United States had brought suit to set aside the patent on the ground that it had been *wrongfully issued* in view of the delay in the Patent Office from 1852 to 1861.

The court in the Berliner case, after discussing the distinction between patents for land and patents for inventions and the "weightier reasons" why the Government should not be permanently deprived of the property through land patents, and then discussing the arguments of the Government in support of the suit, says in describing the practical effect of the delay on the Berliner application in the Patent Office:

"In other words, the telephone, as we use it—that which has become an important factor in the commercial and social life of to-day—does not embody simply the invention of Bell, but also those of Edison, Blake, and Berliner. So that while the public has to-day, by reason of the expiration of the Bell patent, the right to use as it pleases his invention, such right is a barren one, and the telephone monopoly is practically extended to the termination of the Berliner patent. And this exten-

sion of the time of the monopoly has been accomplished by means of the delay in the issue of the Berliner patent, the long pendency of the application in the Patent Office."

The court discusses the contentions of the Government's counsel, and then says (42 Law Ed. p. 156):

"Neither can a party pursuing a strictly legal remedy be adjudged in the wrong if he acts within the time allowed, and pursues the method prescribed by the statute. If the statute gives him five years within which to bring an action on a note he cannot be denied relief simply because he waits four years and eleven months. If he has two years after a judgment against him within which to take an appeal he may wait until the last day of the two years. Under U. S. Rev. Stat. No. 4886, an inventor has two years from the time his invention is disclosed to the public within which to make his application, and unless an abandonment is shown during that time he is entitled to a patent, and the patent runs as any other patent for seventeen years from its date. He cannot be deprived of this right by proof that if he had filed his application immediately after the invention the patent would have been issued two years earlier than it was, and the public therefore would have come into possession of the free use of the invention two years sooner. The statute has given this right, and no consideration of public benefit can take it from him. His right exists because Congress has declared that it should. It will not do to say that because Congress has declared that seventeen years is the life of a patent, seventeen years is the limit of the possible monopoly; for the same legislation that gives seventeen years as the life of a patent gives two years within which an application for a patent may be made, and during that time, as well as while the application is pending in the department the applicant has practically, if not legally, an exclusive use. A party seeking a right under the patent statutes may avail himself of all their provisions, and the courts may not deny him the benefit of a single one. These are questions, not of natural, but of purely statutory right. Congress, instead of fixing seventeen, had the power to

fix thirty years as the life of a patent. No court can disregard any statutory provisions in respect to these matters on the ground that in its judgment they are unwise or prejudicial to the interests of the public."

And again:

"Certain rules of procedure has been prescribed by the Commissioner of Patents, and a certain routine of practice has become established in that department. Now, all these matters of statutory enactment, rules of procedure, and routine of practice, are things over which an applicant has no control. When he has once filed his application, complying with the statutory requirements, then the Patent Office takes possession of the matter. It determines when and how it will act, and the applicant can only ask and wait.

And why should he be called upon to do more? He comes before the tribunal which the Government has established and presents his application. Why should the validity of the grant which that tribunal finally makes depend in any degree upon the number of times he has repeated his application? The true rule is that if application has been made and the applicant has once called for action, he cannot be deprived of any benefits which flow from the ultimate action of the tribunal, although that tribunal may unnecessarily, negligently, or even wantonly, if that supposition were admissible, delay its judgment. If the public is interested in prompt action, if the Government which represents the public thinks that more speed on the part of any of its tribunals is essential, it is the Government which is called upon to act, and the applicant may with propriety wait until either the tribunal has acted or until the Government, having regard for the public interest, has interfered to compel action. Accepting the statement of counsel as to the facts to be corrected in all its fullness, consider what would have been the ruling of a court if an application had been made to it based upon those facts. Suppose the applicant had presented its petition for a mandamus to compel prompt action on the part of the patent officials and said, 'I have applied for and

am entitled to a patent. It will be issued after a while without any judicial compulsion. I can make large profits if the Patent Office will be dilatory and yet I ask a mandamus to compel its immediate action,' would not the ruling have been, 'By your own showing you are entitled to no relief; you have no cause of complaint, it is the Government representing the public which alone can complain.' And if it could obtain no assistance by a suit in advance, can it be punished indirectly by being deprived of that which was finally awarded to it?"

And again:

"Counsel seems to argue that one who has made an invention and thereupon applies for a patent therefor occupies, as it were, the position of a *quasi* trustee for the public; that he is under a sort of moral obligation to see that the public acquires the right to the free use of that invention as soon as is conveniently possible. We dissent entirely from the thought thus urged. The inventor is one who has discovered something of value. It is his absolute property. He may withhold the knowledge of it from the public, and he may insist upon all the advantages and benefits which the statutes promise to him who discloses to the public his invention. He does not make the law. He does not determine the measure of his rights. The legislative body, representing the people, has declared what the public will give for the free use of that invention. He cannot be heard in the courts to say that it is of such value that he is entitled to a larger and longer monopoly; that he is not fully compensated for the great benefit which his invention has bestowed by the pecuniary receipts during seventeen years. No representative of the public is at liberty to negotiate with him for a new and independent contract as to the terms and conditions upon which he will give up his invention. He must come under the dominion of the statute, and take that which the public has proferred its willingness to give. As the lawmaking power has prescribed what the public will give, specified the terms and conditions of purchase, indicated the time and methods of determining the right of compensation, he on his part

> has an absolute legal right to avail himself of the provisions thus made. It is not of course doubted that the courts in construing the patent, as all other statutes, must have regard to the spirit as well as the letter. That simply requires that courts shall ascertain their true meaning, but when that is ascertained the applicant for a patent is entitled to all the benefits which those statutes thus construed give."

And in reference to the point that if there was any compulsion upon Woodbridge to take out the patent within a definite time (not specified), he did so specify the time of one year when he requested the application to be placed in the secret archives, the language of the court is pertinent, in referring to the request of the attorney for Berliner in that case, to have action on the application expedited, and the criticism of the Government counsel thereon that such request was not thereafter reiterated:

> "But is the applicant to be condemned because, having once made an urgent request for action and pointed out reasons therefor, it was not continually repeating that request, because it did not see that such request was placed on the files of this particular application, or, as intimated in the words of counsel, nailed on the door of the Patent Office?"

If there was no extra-statutorial and quasi-trusteeship duty imposed upon Berliner and the Bell Telephone Company in the above case, to hasten the issue of the patent, then there was no duty of that nature imposed upon Woodbridge in this case.

The doctrine enunciated in the Berliner case has been followed and emphasized by the Circuit Court of Appeals for the Second Circuit in the case of *Columbia Motor Car Company* v. *C. A. Duerr & Company,* 184 F. R. 893, decided January 9, 1911, in the suit on the celebrated Selden automobile patent. The application for this patent was pending in the Patent Office for six-

teen years. The defendant sought to have the patent held invalid on the ground of delay and abandonment in the Patent Office. The court said:

> "This patent was applied for in 1879 and granted in 1895. For over sixteen years the application lay in the Patent Office and the applicant took full advantage of the periods of inactivity permitted by the rules and statutes. It is apparent that he delayed just as long as possible the issue of the patent to him. During this long time the automobile art made marked advances along different lines, and when, in 1895, the patent was granted, it disclosed nothing new. Others had then made the patentee's discovery and had reduced it to practice in ignorance of what he had done. While he withheld his patent, the public learned from independent inventors all that it could teach. For the monopoly granted by his patent he had nothing to offer in return. The public gained absolutely nothing from his invention, whatever it was. From the point of view of public interest it were even better that the patent had never been granted. Judge Hough was quite within bounds in saying:
>
> 'No litigation closely resembling these cases has been shown to the court, and no instance is known to me of an idea being buried in the Patent Office while the world caught up to and passed it, and then embodied in a patent only useful for tribute.'
>
> It is urged that we should regard unfavorably the patent on account of this delay in the Patent Office, should seek to avoid giving it a broad construction, and should permit the alleged abuse of the law to weigh against the standing of the complainants in a court of equity. But the patentee acted wholly within his rights. He merely took advantage of the delays which the law permitted him. He followed strictly the statutes and rules of procedure, and the courts cannot exact a greater measure of diligence from him. When the patent was granted under the authority of the law, it became entitled to the consideration accorded to any other patent. If the statutes and rules permit unnecessary delays, they should be changed; but we reject the view that this court owes any duty to relieve against their

operation. This patent, even if it be useful only for tribute, must be viewed without prejudice and with absolute judicial impartiality." (See also *Crown Cork & Seal Co.* v. *Stopper Co.* 108 F. R. 845, C. C. A. 2; *Smith* v. *Dental Vulcanite Co.* 93 U. S. 502, 23 Law Ed. 953.)

SMITH v. DENTAL VULCANITE CO.

This case is so apposite to plaintiffs that it requires no comment except to point out that there was an interval of *eleven years* from the date of rejection of Cummings' application to the date of renewal thereof.

The Court of Claims has sought to point a distinction, unfavorable to Woodbridge, between his case and some of the authorities, to the effect that Woodbridge's application was allowed and the others were rejected. But, it is submitted, there is a much stronger presumption of abandonment in the latter case than the former, as in one there is an acquiescence in the adverse holding that the applicant is not entitled to a patent, while in the other there is a reliance upon the holding that the invention is patentable and upon the promise to issue when requested.

All these early cases show that it was the accepted practice to keep the application in the office for very long periods without acting thereon and that when the question of abandonment came up in the court actions thereon, the test applied was, was there acquiescence in the manufacture or sale or use by others of devices embodying the invention?

FINDING XIV NOT TRULY A FINDING OF FACT, BUT A CONCLUSION OF LAW AND TO BE SO TREATED.

The Court of Claims after deciding as stated in Finding XIII that Woodbridge was entitled to a patent on his invention on March 25, 1852, holds that the Government did not infringe the claims of the application. This holding is contained in Finding XIV. Plaintiffs duly excepted to this conclusion being stated as a finding of fact, and moved that it be stricken out and incorporated in the conclusion of law or opinion or judgment. The overruling of this exception has been assigned as error in plaintiffs' assignment 14. What the holding means is, not that the Government did not use projectiles having some forms of soft metal sabots, because it specifically finds that it did in Finding XII and the appendix thereto, but that the claims (claim 1 only is in issue) are construed by the court as so limited by their term or the prior art or both as not to cover the projectiles which the Government used.

The question of infringement is always either one of mixed fact and law or of law alone, the question of fact being what did the defendant make or use and the question of law what do the claims mean in the light of their terms and as restricted by the prior act or by amendments. The latter point, involving the construction of a written document, the patent, is always one for the court, as distinguished from the jury, a point of law alone. Where the facts are plain and undisputed the question is one of law alone.

The leading case on this point is *Singer* v. *Cramer*, 192 U. S. 265, 24 Sup. Ct. 291, 48 L. Ed. 437.

> "In *Western Electric Co.* v. *Robertson*, 142 Fed. 478, Circuit Court of Appeals, 2nd Ct., the court,

speaking by Judge Townsend, one of the most learned patent jurists of the country, said:

'Where the question of infringement depends entirely upon the construction of a patent either upon its face or in connection with facts of such a nature and effect that they cannot be denied or are such as not to be reasonably disputed, the question is one of law for the court. *Deloriea* v. *Whitney*, 63 Fed. 611, 11 C. C. A. 355; *Black Diamond Co.* v. *Excelsior Co.* 156 U. S. 611; *Singer Co.* v. *Cramer*, 192 U. S. 265, 24 Sup. Ct. 291, 48 L. Ed. 438.'

Referring to the opposing cases, in *Royer* v. *Schultz Belting Co.* 135 U. S. 319, 10 Sup. Ct. 883, 34 L. Ed. 214, there was a conflict of evidence as to the facts; in *Heide* v. *Panoulias*, 188 Fed. 914, 'there was conflicting testimony as to both invention and infringement.' "

In the present case not only are the facts as to what the defendant used undisputed between the parties, but they are conclusively found by the court which has annexed to Finding XII drawings of the Government projectiles and given the court's own description of these devices. On the other hand, as appears from the opinion the court has gone so far in legally construing claim 1 of the quasi-patent, the only claim alleged to be infringed, as to read into the same a feature not expressed in the terms thereof. It is therefore believed that this court will consider Finding XIV as a conclusion of law, open to the review of this court and not as a binding finding of fact. See *U. S.* v. *Clark*, 96 U. S. 37, 24 L. Ed. 696.

It is to be further noted that plaintiffs assigned as error that there are no facts to support the conclusion in said finding, or the facts are not sufficient to support said finding.

INFRINGEMENT.

The conclusion of the court below that the Government projectiles do not infringe claim 1, comes as a great surprise to plaintiffs. If affirmed, then this case will have come to a most lame and impotent conclusion. The court holds that all that Woodbridge invented was the projections on the sabot adapted to fit into the rifle grooves of the gun. Of course, the defendant's projectiles do not have this feature. If this view prevails, what was supposed generally to be a historic invention, of an epoch making character, descends to the plane of a trifling detail improvement of doubtful invention and doubtful utility. It is an invention for which neither plaintiffs, nor Dr. Woodbridge, nor the numerous counsel of the claimants would have lifted a finger to claim compensation. It brings this claim and the litigation thereon, with the accompanying long and earnest consideration of the equities and law points of this claim by the ablest lawyers the Senate has ever possessed, careful reviews and independent considerations by the House, the entry into the case of numerous counsel, several of whom were of distinguished reputation, the expenditure of a large amount of money, time and energy in proving and presenting the case in court, and the testimony of the ablest patent ordnance experts and ablest and most distinguished ordnance experts, Admiral O'Neill, Gen. Crozier, Gen. Butler, Gen. Mordecai —to an absurdity.

Such a conclusion is in direct contradiction to the conclusion reached by every tribunal that has had to pass on this question. Congress would not have taken notice of the invention unless it was plain that the claim applied to defendant's devices. The ground that the claim if issued would cover devices like defendant's was the

principal ground of the Examiner's refusal of the patent, the board's affirmance and the decisions of the Commissioner and District of Columbia Supreme Courts affirming such decision. If it wasn't a broad claim of this character the patent would not have been refused and this claim would not have been here. The patent claim was expressly stated by the Examiner making a report to the Commissioner in 1879 to be a broad claim covering the sabot either with or without projections and covering defendant's devices. It was admitted by defendant's own expert in the Court of Claims case that it applied to a sample shell like Woodbridge's but not having projections, whether such shell be used in a rifled gun or a smooth-bore gun.

If the conclusion were based on evidence produced for the first time before the Court of Claims it might possess some force. But this is not the case. The court merely relies upon the amendment to his claims made by Woodbridge and the alleged prior art cited by the Examiner in the prosecution of his application, all of which were matters of record from the beginning and known to and considered by each of the tribunals above named!

Moreover the conclusion is contradicted by the court's own descriptions of the projectiles of the Government plus its own opinion as to the scope of the invention, as will presently appear.

Claim 1 of the allowed Woodbridge application is as follows (Rec., 13):

> "First, The construction of an extensible metallic ring or sabot as above described and placed in the rear of the projectile, for the purpose of diminishing the windage and giving the ball its motion in the direction of the axis of the bore."

The consideration of the meaning of this claim involves some understanding of the general history of the

art and the place which Woodbridge's invention occupies therein.

The Woodbridge Invention.

Dr. Woodbridge was one of the most eminent and brilliant ordnance experts and inventors of his time.

He was the inventor of the wire-wound gun, and so recognized by the British Admiralty. (See Brit. Ency., 11th Edition, Vol. 20, p. 193.) Such guns are used to this day by the British Navy.

The United States Government thought enough of this idea to spend thousands of dollars in experiments thereon. (See War Department Ordnance Report No. 1887.)

He was the inventor of the piezometer, an instrument for determining powder pressures in guns. (Appleton's Cyclopaedia of Applied Mechanics (1881), p. 479, where Dr. Woodbridge is referred to by name.)

He was an industrious experimenter in the field of ordnance and the author of numerous scientific treatises upon the results of his experiments and investigations, including a work on powder pressures in cannon officially adopted and published by the United States Army Ordnance Department as part of the official "Ordnance Notes" and reprinted in the London Engineeer, a foremost scientific journal.

A report by him in 1885 on experiments on the mechanical properties of steel was published as a separate volume by the Ordnance Department of the Army. In 1884 and 1887 he was invited by the secretary of the Institution of Civil Engineers in London to contribute articles on the construction of wire-wound guns and the properties of steel. A method of obtaining the position of centers of gravity in guns was prepared by him, was

copied, translated and published in a titled Austrian publication. He was elected a member of the U. S. Naval Institute.

It may be here stated, although not part of the record herein but of official record in the Navy Department, that as late as 1898 Dr. Woodbridge was employed by that department in experiments designed to improve the time fuses then in use.

The publications referred to have not been formally offered in evidence in this record, since they do not bear directly upon the issues herein and were (or most of them) referred to in the deposition of Dr. Woodbridge merely in support of his qualifications as an expert witness.

The invention involved here was not, then, the chance thought of an occasional inventor, a mere paper invention of undemonstrated practicability and value, but the product of the highly trained and inventive mind of a scientific as well as practical specialist in the line of ordnance.

Referring to the Woodbridge application (Rec., 10) the petition states that the petitioner "has invented a new and useful improvement in rifled ordnance." In the specification, he says: "The nature of my invention consists in applying to a projectile to be fired from a rifled gun a rifle-ring or sabot, in the manner hereinafter described, for the purpose of giving to the projectile the rifle motion." This rifle-ring or sabot, as he further describes, consisted of a ring of extensible metal adapted to be expanded by the action of the gases of the powder charge into and against the wall of the gun so as to fill the bore thereof. This action of the ring resulted in closing the bore against windage and gave the projectile a motion in the direction of the axis of the bore of the

gun and stretched the ring against the wall of the rifled bore, thus filling the grooves of the rifling, with the consequent result of rotating the projectile, as the same was driven through the gun.

Prior to the date of Dr. Woodbridge's invention, which was in 1850, neither elongated projectiles for ordnance, nor rifled ordnance itself had been in practical and successful use. Proposals had been made to rifle ordnance and to use elongated projectiles therein with means to engage the rifling of the guns in order to impart thereto the rifle motion. These prior proposals and experiments are referred to in the Treatise on Ordnance and Armor by Alexander L. Holly, New York, D. Van Nostrand, 1865. (See also Appleton's Cyclopaedia of Applied Mechanics, Vol. 2, 1881, p. 479, by D. Appleton & Company, and Ency. Brittanica, 11th Ed., Vol. 20, pp. 197-199, and also in the Woodbridge pamphlet of 1852, in which publication Dr. Woodbridge refers to the prior proposals. These publications refer to experiments made in Russia in 1836 by Montigny, a Belgian, which it is stated were not a success. It is not known from these publications exactly what the Montigny invention was. In 1845 Major Cavalli, a Sardinian officer, experimented with a breech-loading cannon which was rifled with two grooves for an iron shot and in which he proposed to use an elongated projectile with two ribs cast in it to fit the grooves, but no means were taken to prevent windage.

In 1846 Baron Wahrendorf of Sweden tried lead-coated projectiles, the coating being attached to the projectile by means of grooves under the outside of the shell. In this construction the lead was compressed into the grooves. It had also been proposed to use circular studs on the projectile adapted to loosely engage the grooves. This was known as the stud system and was referred to by Dr. Woodbridge in his pamphlet. Experi-

ments had been made with all these plans and none had proved successful prior to the Woodbridge invention.

Including these projectiles experimented with before Woodbridge, and those developed subsequently, projectiles for ordnance may be divided, according to their means for giving the rifle motion, into three classes—the "stud or form," the "compression," and the "expansion" systems.

Holly, *supra;*
Appleton's Cyclopaedia;
Encyclopaedia Britannica.

In the "stud, form or centering" system, the engagement with the gun rifling is obtained by a formation carried by the projectile for mechanically fitting the bore of the gun, as by (1) providing the projectile with planed faces, as for instance the hexagonal shell of Whitworth, or (2) with ribs, or (3) with circular studs which enter the spiral rifle grooves in the gun.

These projectiles could be used with either muzzle-loading or breech-loading guns, but when used with the former had the objection of the difficulty of entering the projections into the muzzle and ramming the shell home, and many attempts were made to overcome this objection. They possessed the further disadvantage that, having purely a mechanical fit in the grooves, they would not close the bore against windage.

The "compression" system comprises projectiles having either (1) a lead coating on the projectile larger than the bore of the gun and adapted to be compressed by the bore into the grooves upon the explosion, (2) a circular driving band of copper, also larger than the bore and adapted to be compressed into the grooves. This is sometimes known as the "Krupp" system. In both forms of the compression system the projectiles could, of

course, be loaded only at the breech. During the period covered by the Woodbridge claim nearly all guns were muzzle loaders. Another objection to the first form was the dangerous stripping of the projectile coating. The second form of the compression system is the present construction in use for all shells. Of course all modern guns are breech loading.

The expansion system comprised a ring, cup or sabot of extensible metal softer than the body of the projectile and fixed on the rear end thereof and no larger than the bore of the gun and adapted to catch the gases of explosion, and be expanded by them against the bore and into the grooves, and so stretched as to fill the bore and thus prevent windage and also center the projectile and thereby give it a motion in the direction of the axis of the bore, and also impart the "rifle" or rotary motion to the projectile.

The Woodbridge projectile belongs to the expansion system of projectiles for cannon, *and Woodbridge was the pioneer in that system.*

THE SPECIFICATION OF THE WOODBRIDGE APPLICATION AND THE PARTICULAR MECHANICAL FORMS IN WHICH THE APPLICANT STATES THE INVENTION MIGHT BE EMBODIED.

An invention is distinct from any particular physical embodiments in which the invention may be expressed.

An invention is an intellectual conception of means adaptable for and capable of producing a new and useful function. The concrete form of such conception may, of course, be carried out in various ways and by various instrumentalities. This principle, of course, is particularly familiar in the application of the doctrine of mechanical equivalents where a cam may be the equiva-

lent of a lever or a spring—the equivalent of a weight, for example.

In his specification, Woodbridge first proceeded to describe the broad idea of the extensible metal ring adapted to be expanded against the inner surface of the gun to fill the bore thereof completely. He says in the beginning of his specification that the nature of his invention

> "Consists in applying to a projectile to be fired from a rifled gun a rifle-ring, or sabot, in the manner hereinafter described, for the purpose of giving to the projectile the rifle motion."

Thus he makes it plain that this circular or shoe-like member constitutes the essential idea of the means for performing the desired function.

He then proceeds to describe generally the construction and material in this ring, and says:

> "It is a ring of metal, softer than the ball or cannon, and capable of extension without rupture, whose exterior surface has the form of the bore, but sufficiently smaller to allow it to be readily introduced into the gun; and the inner surface of which fits the surface of the ball in the rear of its greatest diameter."

Although this description is thus general, he is particularly referring, as indicated by the preceding sentence, to the exact form of the projectile and ring illustrated in the drawing and designated by reference characters. Still continuing to refer to this specific illustration, he goes on to say:

> "Its rear end is grooved, as shown in the section (Fig. 4), in order that the thin portions may act valvularly to prevent the escape of the gases between it and the sides of the bore and projectile."

The action of the ring is then described. He says:

> "The surface of the rifle ring exposed to the action of the gases formed by the inflammation of the

> powder being much greater, in proportion to its inertia, than that of the ball, the ring is driven forcibly forward upon the ball so as to embrace it tightly, and thus impart the rifle motion which itself has received from the grooves of the gun; *and at the same time it is stretched* to fill the bore of the gun completely, thus destroying the windage and causing the ball to advance strictly in the line of the axis of the bore."

He then proceeds to describe a suitable composition for a ring of the proportions represented in the drawings and for a certain charge of powder. The specification then describes the possibility of use of the ring and the adoption of such use for spherical or other shot in *smooth-bored* guns, in connection with which he says the ring will avoid "the loss of force by windage, and for giving the ball its motion in the direction of the axis of the bore of the gun." In describing this possible use of the invention in smooth-bored guns he refers for the first time to the projections on the ring, indicated in the drawings, stating, in effect, that they are dispensed with—in the words: "but without the projections for the grooves of the gun."

Of course, these projections would be unnecessary to the convenient insertion of the shell of a smooth-bored gun and would be objectionable as affording open spaces between the same. He then claims:

> "The application for (of) rifle ring or sabot, constructed substantially as herein described, to the rear of a projectile for the purpose of communicating to it the rifle motion, without restricting myself to the particular proportions or materials mentioned in the description."

And in further emphasis of the point that the invention might also be used in smooth-bored guns, he says:

> "I also claim *the use* of a similar ring of extensible metal in smooth-bored guns, as set forth in the foregoing specification."

It is to be noted that Dr. Woodbridge prepared and prosecuted his own application. It is doubtless owing to this fact that the claims were somewhat informal, since, of course, it was unnecessary to claim the particular "purpose" or the particular "use" of the invention, since an inventor is entitled to all the uses to which his invention may be put.

The Patent Office then acted upon the application and referred the applicant to a publication entitled the "Artizan," and also to the rejected application of Francis Mayer, which, of course, as has been established by decisions of the courts since the date of the Examiner's action in that case, was not a proper reference, since it was not a publication or a patent. The applicant replied to this letter of the Examiner in an argument pointing out the differences between his application and the construction shown in the "Artizan," and thereupon the Examiner replied to the applicant's letter by suggesting certain skeleton claims which the applicant substantially adopted by his letter of March 23, 1852. (Rec., 12.) In these amended claims the Examiner and the applicant first defined the broad idea of the invention, namely, the extensible metallic ring, or sabot, as set forth in the first claim, thus covering a construction applicable for use with either a smooth-bored or rifled gun, and in the second claim, which was made in specific and subordinate claim, they directed the subject matter thereof particularly to the metallic ring furnished with projections, as described, in combination with a rifle-bored gun, and ending with the phrase: "For the purpose of communicating the rifle motion in manner substantially as herein set forth," which phrase, of course, refers to the entire metallic ring.

In the second claim the rifle-bored gun was brought in

as an element of the combination because the specific feature of the projections could not be usefully employed in connection with a smooth-bored gun.

It is the subject matter of the broad claim 1 only which is here involved in issue.

The fundamental principle of the Woodbridge "sabot," as described by him in the specification and defined in claim 1 of the allowed application, is that of the expansion of the "sabot" under pressure of the powder gases, whereby it is caused to completely close the bore of the gun as the projectile is driven forward and take the grooves of the rifling if the gun is rifled, and impart a rotary motion to the projectile.

The sabot without projections was one form of embodiment of his invention; the sabot with projections was another form. Each contemplated expansion of the sabot and gripping of the bore and of the shell thereby, and the rifle motion was imparted by the engagement due to such expansion or stretching. If a shell were constructed exactly as the language of claim 1 calls for, and without projections, and should be (as it was) used in rifled guns it would give the rifle motion to the projectile. Of course it would make no difference to what use the shell should be put. It is admitted by defendant's expert that a smooth sabot projectile used for a rifled gun would come under claim 1.

These projections performed the function of enabling the shell to fit the gun, when rifled; they could not perform the functions of closing the bore against windage, giving the shell a motion in the direction of the axis of the bore and imparting the rifle motion, because such actions were obtained by expanding or stretching the metal into the rifle grooves so as to close the same and firmly engage them and by rigid connection between the

ring and the projectile, obtained either by the wedging action, as in Woodbridge and Hotchkiss, or by the permanent connection as in Parrott. The projections, therefore, form no part of the essential inventive idea.

Woodbridge was the first to devise rotation-giving and bore-closing means for projectiles capable of being expanded without rupture into the grooves and against the bore by the initial force of the gases of explosions so as to fully close the bore and grooves and at the same time retain a sufficient grasp on the projectile to cause the latter to take the rotation imparted to the said means by the rifling of the gun. And these characteristics are found in the infringing projectiles.

The Amendment Made by Woodbridge.

The Court of Claims grounds its limitation of claim 1 (or of the specification, it is not clear which) upon the amendment of his original claims filed March 23, 1852, and upon an interpretation of his attempted amendment in 1861. The court says (Opinion, 36):

> "On the contrary the principles he embraced within his claims had been theretofore conceived, as fully attested by the *emendations of his claims to meet* the state of the *prior* art. * * * He submitted *without protest* to the rulings of the Patent Office calling his attention to the state of the prior art. The applicant willingly adopted the amendments suggested and thereby assented to their limitation." (Italics ours.)

In the first place what was the prior art cited by the Examiner? First, the Mayer rejected application. Of course, this was not a proper reference, now or then, not being a patent or a printed publication. *Herring* v. *Nelson*, Fed. Case No. 6424. But it disclosed merely a projectile provided with "centering" bands slightly

larger than the diameter of the projectile, with the intention to provide a snug fit, avoid scoring of the gun bore, preventing "wabbling" and prevent the escape of the powder or explosive gases. There is no description of any "rifling" action. If the bands had been made larger than the gun bore and employed in rifled ordnance they might have served as bands of the "compression" type, but this would be an inventive departure from Mayer's disclosure, and was clearly not contemplated, as the Mayer projectile was intended for use with muzzle loaders only, as evidenced by the reference to "ramming." There is not suggestion of an *extensible* metal ring adapted to be expanded to take into the rifle grooves of the bore or for other purposes. No matter what it showed, Woodbridge pointed out that he made his invention prior to Mayer's date of application. That was the only distinction he made. And the Examiner dropped it as a reference.

The other citation was the "Artisan," a publication. It shows in Fig. 2 a wooden wadding for centering the shot against wabbling. It is not a ring of extensible metal and not capable of giving the rifle motion or being expanded. Fig. 4 shows an iron shot incapable of being expanded and has no ring or sabot. Woodbridge did not admit that this shot had a ring capable of extension without rupture. He expressly denied it in his letter of February 23, 1852.

The article further referred to a sugar loaf shot of the Messrs. Lancaster with the suggestion that "the shot might be made of cast iron with a leaden belt to take into the grooves of the rifle barrel." Dr. Woodbridge took the trouble to take note of this reference and distinguish therefrom in his argument, although he need not have done so, as this bare suggestion of an

idea without description of *how* it is to be carried out in construction or operation could not constitute an anticipation. What the belt was like and how mounted on the projectile, whether a wide coating of lead, acting by compression, or a longitudinal belt positively fitting the grooves, nor whether a circular belt larger than the bore and also acting on the compression system, nor whether it actually in itself gave the rifle motion, and the belt was merely to prevent erosion, does not appear.

But Woodbridge did not distinguish from this reference on the ground that it did not show the projection while his own device possessed such feature, but on the other distinctions of his invention.

Now the Examiner did not reply by saying "your argument does not convince me of the differences between your invention and the references and you can only clear the latter by limiting your claim to projections," which is what the court's statement would lead one to believe he said, but he accepted Woodbridge's statement, acquiesced by silence therein and suggested the skeleton form of two claims, evidently for the purpose of putting the claims in more formal language. And the first of these claims, the one now in issue, contained no reference to projections, while it is evident that if the references disclosed the idea of an extensible metallic ring adapted to be expanding, they would necessarily meet the claim, not only in respect to the structure therein, but also in the performance of the functions of closing the bore and causing the projectile to travel in the axis of the bore.

Another dilemma in which the court's position places it whether or not Woodbridge had the idea of giving the rifle motion by means other than projections, is that the court itself in its "appendix" forming part of Find-

ing XIII specifically describes the ring or sabot of each of the projectiles used by the government as being expanded to close the bore against windage and such action also necessarily performs the other function expressed in claim 1 of centering the projectile and causing it to travel in the direction of the axis of the bore of the gun. Hence whether or not Woodbridge's projectile or the defendant's projectiles be used in a rifled or smooth bored gun, the latter embody the subject matter of claim 1.

The *proper* interpretation of the claim is that expressed by the Board of Examiners-in-Chief in their opinion, as follows:

> "The first claim, however, is a broad one, to the use of the extensible metallic ring or sabot for the purposes above mentioned without reference to the projections."

The same interpretation had been given by the Primary Examiner, was afterwards given by Congress and its committees, with full knowledge of the filewrapper and its prior art, and by all the patent experts in the case who testified before the Court of Claims, including defendant's expert. The claim so interpreted formed the basis for the evidence as to the value of the invention to the government on which the court based its finding of value in the last paragraph of Finding XII.

Other Limitations Attempted to Be Imposed on Claim 1 by Government Counsel Below.

These were the outer and inner lips formed by the groove at the base of the sabot. Such attempt was based on the words "as above described." The lack of force of this phrase to import anything into the claim not necessarily imported thereto by geenral rules of con-

struction is fully set forth in *National Tube Co.* v. *Mack,* 216 F. R. 507, C. C. A. (Sixth Circuit).

The attempted limitation of the claims by the words "substantially as described" is also fully answered in the case of *Hobbs* v. *Beach,* 180 U. S. 400, 21 Sup. Ct. 416, 45 Law Ed. 586, where the Supreme Court observed that even if these words are important in the claim, that it is still true, as observed in *Morley Sewing Machine Company* v. *Lancaster,* 129 U. S. 269, 9 Sup. Ct. 299, 32 Law 715:

> "Where an invention is one of primary character, and the mechanical functions performed by the machines are, as a whole entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements."

In the De Bange case (for the gas check of asbestos and tallow) the claim specified the ring constituting the packing as *"the yielding packing M."* The specification described "M" as a ring made up of the asbestos and tallow, and two enclosing shells of copper, and two outer shells of brass. The government contended that the use of the reference character "M" in the claim limited the claim to all the details of construction of the ring specified in the description, and that since the government used only steel shells in place of the copper and brass shells of the De Bange specification, it did not infringe. (Certainly the use of reference characters in a claim has more limiting effect than the words "as above described" used by Woodbridge, as is well recognized in patent law.) But the Supreme Court said:

> "It would seem, therefore, that the contention of the Government turns upon a question of fact found against it by the court below; that is, it was found that the particular envelop of the tallow and asbestos pad were not essential features of De Bange's

invention, and that the substitution of steel rings for brass rings would be an infringement of the invention. As said by counsel for claimant, claim 1, 'does not recite among its elements the materials whereof the envelop (of the pad) and rings are made. It is, on the contrary, obvious that any suitable material may be used for these subsidiary parts.' It is conceded that pliable copper envelop (M2) may be properly regarded as a part of the 'Yielding packing.' The patentee so states, but he does not say that the 'strong shells of brass M3 M3 are parts' of it. * * * It would indeed be arbitrary, as said by claimant, to read into the claim the specific metal of which those shells are composed 'for no other purpose than to render it (the claim) worthless.'

We have seen De Bange describe what he conceived to be the best form of his invention, and contemplated that it could be represented in other forms and proportions. This, however, was unnecessary, for the law would secure him against imitation by other forms and proportions. *Winans* v. *Denmead*, 15 Howe 330, 14 L. Ed. 717; *Hotchkiss* v. *Greenwood*, 11 How. 248, 256, 13 L. Ed. 683, 690; *Western Electric Co.* v. *La Rue*, 139 U. S. 601, 608, 35 L. Ed. 294, 297, 11 Sup. Ct. Rep. 670.

We think, therefore, that the Court of Claims rightfully decided the question of infringement against the Government."

Much has been made by the court of Woodbridge's attempt in 1861 to amend his claim by adding thereto the words "whether the binder part be grooved or not, and without regard to the form of the bore." But this attempt (which would not have been made by an attorney, because the claim already was broad enough to include the suggested structure) was merely a precautionary effort to make plain what was already embraced in the language. He did not admit that the allowed claim did not cover the suggestion since he said "as it seems now that it ought." (Rec., 14.)

It must be said that the court's effort to twist this attempt of the inventor to make more certain what was already clear, into an admission, savors of a partisan effort to make out a case.

THE REMAINING PRIOR ART PATENTS AND PUBLICATIONS.

The court below, as we have seen, found Woodbridge entitled to a patent but held that he had limited his patent to the projections by an amendment made in view of a certain prior publication and a rejected application. In view of this finding and holding it is supposed that all other prior art matters become immaterial, and unnecessary for consideration by the Supreme Court. But in Finding IX, the court below lists ten patents or publications which are alleged to "relate" to the prior art. No further finding of fact is made as to these matters.

Assuming that upon some ground, they may be held to be still entitled to consideration by this court, plaintiffs will discuss them.

THE FRENCH PATENTS TO DELVIGNE, MOREL AND MINIE HAVE NOT BEEN PROVED—EITHER IN RESPECT TO THEIR DATES OF ISSUE OR THE DATES WHEN THEIR SPECIFICATIONS BECAME ACCESSIBLE TO THE PUBLIC, AND ARE THEREFORE NOT IN THE PRIOR ART.

This objection is real and substantial, not technical as urged by Government counsel below. The above dates not proved or shown in any way, are essential to establish anticipation under the statute and the authorities, of the date of Woodbridge's application; the knowledge of them is essential to afford plaintiffs the opportunity of proving in reply that his invention antedated the

effective anticipating dates of these patents. It is a fact of which the courts take judicial notice, that French patents are *dated as of the day the applications are filed.* Plaintiff's have endeavored to ascertain when these patents were actually sealed and issued, and, most important, when their specifications *became accessible to the public.* It is their belief that Morel and Minie were not published until after Woodbridge's reduction to practice in 1850. As to Delvigne they were unable to find out anything respecting the date when his specification became accessible to the public. The point is further important because in the thirties and forties it was the French custom to issue secret patents, the specifications of which did not become accessible to the public for many years afterwards, sometimes ten or twelve years. This custom was probably especially applicable to weapons of warfare.

Plaintiffs duly objected to the proof of these patents, excepted to their inclusion in the findings and assigned error for such inclusion, and the court below made a special finding thereon in IX (incorrectly designating the "copies of specifications" as "patents," however.)

The leading cases on this point are *Howe* v. *Morton,* 12 Fed. Cases, p. 688 Case No. 6769; *De Florez* v. *Reynolds,* 8 Fed. 434; *Brooks* v. *Norcross,* Fed. Case No. 1957; *Ireson* v. *Pierce,* 39 Fed. 795.

See also the recent full discussion of the point and citation of all the authorities by the Commissioner of Patents in *ex parte Rackham,* 306 Patent Office Official Gazette, 243.

See also *Barber* v. *Otis Motor Sales Co.,* 265 Fed. 675; *American Roll Paper Co.* v. *Western,* 45 Fed. 686; *Sirocco Eng. Co.* v. *Sturtevant,* 220 Fed. 137; *Elec. Accum.*

Co. v. *Julien Electric Co.*, 36 Fed. 117; *Bliss* v. *Merrill*, 33 Fed. 39.

Defendants first relied on Section 893 of the Revised Statutes for proof of these patents, then on plaintiffs' objection, sought additional proof as to Delvigne, although not as to Morel or Minie. Plaintiffs have no quarrel with Section 893. It merely makes the certificate of the Commissioner *prima facie* evidence of the grant of letters patent and of the *date* thereof. But the *date* of French patents is the date of the beginning of the term, not when the patent is granted, and *not* the *date* when the specifications *become accessible* to the public, which are usually years after the "date of the patent." Section 893 was useful only in fixing the limit of the terms of U. S. patents at the period when they were limited by statute by a previously granted foreign patent.

1. Taking the French patents there is no certified copy of the *"Brevet d'Invention"* or Letters Patent. The certified copies of alleged French patents filed are merely copies of the *specifications* accompanying the respective Letters Patent. The certificates of the Director of the French Patent Office, of the Chief of the Bureau of Personnel of the ministry of commerce, and minister of foreign affairs, and the American Vice-Consul General attached to the hand-written copy of the *Delvigne patent only,* are merely to the effect that the copy is a correct copy of the *specification.*

This certificate, apart from the fact that it is not under the great seal of France, is not a certificate attesting the genuineness of the alleged Letters Patent, nor proof of the grant of the same.

Proof that a copy is a true copy of a specification is not proof of the issue of Letters Patent. In the

case of *Schoerken* v. *Swift*, 7 Fed. 469, it appears to be plain from the decision of the court that there was a certified copy of the "patent." That is not the case here.

2. In respect to these foreign patents it has always been held necessary to prove two facts. First, the date of the official grant of the patent; and, second, the date when specifications accompanying the patent became accessible to the public. This is done in the case of British patents by proving the date of sealing, and proving the date of enrollment of complete specifications. The importance of the proof of these points depends not upon any technical rule of evidence as to authentication of foreign documents, but from the mode of procedure in foreign patents, which includes in England the filing of a provisional specification which may or may not mature into a patent; the dating of the patent when issued from such filing date, the subsequent date of sealing of the grant and the subsequent date of filing or enrollment of the complete specifications, whereby the invention is made accessible to the public, and including the circumstances that in old French patents two kinds were granted, namely, private and public, and the former have been held not to be bars under the United States practice, and also the practice of dating French patents from the date of deposit of the documents comprising the application. In the leading case of *Howe* v. *Morton*, 12 Fed. Cases, p. 668, Case No. 6769, a British patent was cited that was dated in December, 1844, but it was proved that complete specifications had not been enrolled until June, 1845. The Court said:

> "What is the meaning of the word 'patented'? The English government may give such effect to certain acts of their own as they see fit; they may say letters patent may be granted in general terms, and that the fourteen years they grant may begin

at the date of the letters patent, though no specification be enrolled till six months after. That is the law of England—but the question is, What did the Congress of the United States intend when they used the words, 'patented in any foreign country'? Did they mean that the invention might be patented before it was made? Because under the English law, the letters patent might be granted before the specification was made, and the specification might contain inventions made after the letters patent were granted. * * * What is meant by Congress undoubtedly is, in the first place, that there shall have been an invention; and, in the second place, that it shall have been made patent to the world—patented. Now, we have no satisfactory evidence that the invention was made, and we have positive evidence that it was not made known to the world by being patented, until June, 1845; it was not made patent until after the invention of Howe."

This case has been repeatedly followed. In a similar case, Judge Jenkins, in *American Bell Telephone Company* v. *Cushman,* 57 Fed. p. 845, said:

"The invention is not patented abroad before the actual sealing and issuance of the patent. * * * The term patented, as used in our statutes, does not mean the preliminary proceedings, but the actual issuance of the patent under the seal of the government speaking the exercise of sovereign will, investing the patentee with the grant of a monopoly. *Gold & Stock Telegraph Co.* v. *Commercial Telegram Co.,* 31 O. G. 1559, 23 Fed. Rep. 340; *Emerson* v. *Lippert,* 42 O. G. 964, 31 Fed. Rep. 911; *Seibert Cylinder Oil Co.* v. *Powell Co.,* 47 O. G. 1072, 35 Fed. Rep. 591; *Smith* v. *Goodyear Dental Vulcanite Co.,* 11 O. G. 246, U. S. 486."

This case goes to the point of the sealing of the grant.

Further on the point that not only must there be a sealing but a disclosure of the invention in the specifications, and the date of this disclosure must also be

proved, the case of *Rumpff & Graessler* v. *Kohler,* 23 O. G. C. B. 1883, 29, is pertinent, in which the Commissioner said: "In all the cases which I have been able to find, the word 'patented' has been given its ordinary construction—that is, *made known.* An invention cannot be considered as made known or patented until a complete description of it is given."

See also *American Diamond Rock Co.* v. *Seldon,* 1 Fed. Cases, p. 639, Case 297.

3. Referring to the copy of the specification of the alleged Delvigne French patent, certified to by the French Patent Office, it is to be noted that it starts out with the heading "specification" and the certificate applies to the fact that the copy is a true copy thereof. In the handwritten copy of the specification, first paragraph thereof, is something additional to that shown in the printed copy of the specification. This additional paragraph is as follows:

> "Specification annexed to the five years patent *taken* out on May 17th, 1839, by," etc., "to whom it was delivered by order of the minister," etc., "on the 13th of April, 1840."

This paragraph was interpolated by the Director of the French Patent Office into the specification without authority. It is not evidence of the facts therein recited nor of the date of the actual grant or decree constituting the "Brevets d'Invention" nor does it even purport to be proof of the fact when the specifications were made accessible to the public. It might well have been a secret patent and the specification not published until many years after the dates given in this interpolated paragraph. Moreover, there is nothing in this certificate to show anything in contradiction of the point made by plaintiffs that French patents of this date were dated

as of the date of deposit, which point is still insisted to be correct.

Renouard French Patent Law, 1825.
Perpigna on French Law of Patents, English Edition, Published in Paris in 1832.
Reynault Patent Law.

The defendant makes the point that the date of the patent corresponds with the alleged date of delivery of the patent stated in the unauthorized, interpolated and incompetent paragraph at the beginning of the specification; but the point is, Where did the party who certified to this fact get his knowledge as to the date of delivery? Nor is there any evidence when these specifications became accessible to the public.

In the leading case of *Brooks* v. *Norcross*, Fed. Case No. 1957, involving proof of a prior French patent, it was said:

> "Again, copies are given in evidence of the specifications and drawings of both of those machines; but none of the *patent itself*, in either, and without the latter, the proof required by law that they were in truth patented, is defective, though the probability is that they were patented in some way.
>
> A copy of the patent itself has been omitted by accident, or because it would disclose the fact of the patent being private. The French laws at that time required also a *publication of the patent for a certain length of time in the bulletin of the laws, in order to make it valid.* But no evidence of such publication in either of these cases is attempted here. Reynault Patent Law, 137 Perp. Pat. in 4 Law Lib., c. 51."

In *DeFlorez* v. *Reynolds*, 8 Fed. 434, there is a long and elaborate discussion of the necessity of proof of the effective dates of French patents. From a discussion on p. 436 it appears that the word "taken" which was made "taken out" in the interpolated paragraph

in the specification of the Delvigne patent, means "applied for." This case relates to fixing the term of the United States patent, which under the law was then limited to expire with the expiration of the term of any prior foreign patent, and the court distinguished between the date of a foreign patent when considering it for the effect of limiting the term of the U. S. patent and the effect of the same in respect to its date when used as an anticipation of the U. S. patent. Thus at the end of the opinion the court said, after deciding that the term of a U. S. patent ran from the date when the foreign patent was sealed:

> "This view is not necessarily applied to a case where a foreign patent to one inventor is set up to defeat a United States patent to a different inventor. In such case the manifest intention of law is that the foreign patent shall apply only as to a date when the invention *was published or accessible to the public* and not as to an earlier date from which the inventor may have enjoyed the benefit of a foreign patent as a patent."

Finally, this point is conclusively settled by the decision of the Court of Appeals of the District of Columbia in the case of *Rousseau* v. *Brown*, 21 App. D. C. 104 O. G. 1120, Commissioner Decs. 1903, p. 588 (opinion by Chief Justice Alvey)' where Rousseau submitted "to the Patent Office in support of his claim what he alleged to be an official copy of his French patent; but which in fact appears to be only *a copy of the specifications and drawings annexed to a French patent taken by Louis Rousseau on an application filed April* 2, 1900, *and delivered to Rousseau* on the 18th day of July, 1900." (It will be seen that this copy and certificate were practically identical with those in this case.) "The patent itself has not been exhibited * * *. A foreign patent is admissible on an issue of priority, but only as of the date that it actually became a patent not of the date

established by relation to the application upon which it was granted." * * * "A foreign patent is competent evidence by force of the statute, to negative the alleged novelty of an invention described in a pending application but as we have before stated, the French patent, alleged to have been granted on July 18, 1900, has not been exhibited in evidence."

In the case of *Robin & Mueller* v. *Bonnet,* 113 O. G. 2506, which was merely a decision by a commissioner of patents, it appears there was apparently a certified copy of the *grant.* However that may be, if there is anything in this case opposed to the case of *Rousseau* v. *Brown, decided* by the District of Columbia Court of Appeals, the latter must prevail.

Abbott's Patent Law of All Nations, 1886, p. 151.

Greeley Foreign Patents and Trade-mark Laws, p. 115.

It is to be noted that the "dates" of these patents are only a short time before the date of invention of the Woodbridge projectile, and particularly in the case of the Minie patent, *it is extremely probable that the same did not become public until long after the date of the Woodbridge invention.*

As stated in *Brooks* v. *Norcross,* it is probable that the defendant did not file a certified copy of the letters patent of these two patents and show the date of publication of the specifications, because such proof would have shown that they were subsequent to the Woodbridge invention.

The disclosures made in these patents are not material to the questions of novelty and limitation of the Woodbridge invention, but plaintiffs should not be obliged to consider, at any stage of this case, patents

whose effective dates are not proved and which may have been subsequent to the Woodbridge invention.

THE DISCLOSURES OF THE ALLEGED PRIOR ART PATENTS AND PUBLICATIONS.

Under the rules of this court the testimony of the experts explaining the construction shown in these patents is not available on this appeal, and in the absence of the same and of any discussion of the disclosures by the court below, it would seem unfair to both parties for this court to attempt an analysis *de novo*. However, saving any rights that plaintiffs may possess by reason of such lack of evidence, or finding, or discussion, plaintiffs will take up these articles.

COURT OF CLAIMS EXHIBIT A-1, WILKINSON'S BRITISH PATENT NO. 1694 OF 1789.

Impossible to understand what structure intended to be disclosed as admitted by the experts for both parties. The "belt" may be integral with the cast iron body of the projectile or separate. Impossible to say whether of the "stud" or "compression" system. It certainly does not disclose the idea of expansion of a sabot of soft metal on a hard metal projectile.

COURT OF CLAIMS EXHIBIT A-2, MANTON'S BRITISH PATENT NO. 1893 OF 1792.

No limitation of claim 1 by this patent because it possesses no extensible metallic ring. It shows a wadding of wood which would split if expanded and particularly could not be wedged on the shot without splitting. This crude device never came into use.

Defendant admits that this patent discloses nothing

but a sabot of wood. It asserts that the "device did operate successfully as shown by Major Mordecai's report." In this defendant is mistaken. Major Mordecai states that the device was "perhaps" tried and the quotation from Greener on Gunnery, on which he relied, "that the plan proposed is now on trial or shortly will be." There is no evidence that it ever was actually tried. It was certainly never put into use from its date, 1792, either before Woodbridge or after Woodbridge, in spite of the great demand for a successful means for giving the rifle motion to projectiles, and in spite of the fact that, as stated by the Board of Examiners in Chief of the Patent Office: "Seldom during any period in the history of the world has any subject connected with the science of war attracted more attention and been productive of more *experiments* than the subject of making suitable projectiles for rifle cannon."

It is merely a proposal of an impracticable plan and cannot under the law constitute an anticipation or limitation. It is not a mere case of a substitution of one material for another. This point is conclusively settled in *Smith* v. *Goodyear Dental Vulcanite Co.* 93 U. S. 486, 23 Law Ed. 952, involving a patent for a plate of hard rubber for holding artificial teeth, plaster plates being previously used (see that part of the Sup. Ct. opinion on p. 954, 23 Law Ed.).

This case has been approved and followed in numerous cases as seen in the note thereto, occurring on p. 1003, 23 Law Ed.

In the De Bange case (*United States* v. *Societe Anonyme Des Anciens Etablissements Cail,* 224 U. S. 56 Law Ed. 778, same case below 43 Ct. Cl. 25) which was a Court of Claims case very similar in the nature of the invention and defenses to the present case,

the invention consisted of a gas check or "obturator" for breech-loading cannon and a packing-ring formed of asbestos and tallow, which ring was enclosed in copper shells which in turn were embraced by brass shells. The ring surrounded the closing plug or breech block near the inner end of the latter (just as the ring surrounded the projectile in the Woodbridge invention) and when the charge was fired the force of the explosive gases *expanded the ring* against the bore of the gun, closing the bore against the escape of the gas (as the Woodbridge ring on the projectile was expanded).

The Supreme Court after a reference to the patents of the prior art and the findings of the Court of Claims relative thereto, said in respect to these patents and the bearing on the De Bange invention:

> "They reveal nothing material to be considered that the findings of the Court of Claims do not show of the prior art and the progress, from its failure to the success of the De Bange invention—a success, it may be conceded, that availed itself of all that the prior art demonstrated, but went beyond it to the fulfillment that it had not achieved.
>
> The necessity of a gas check to the success of breech-loading guns all could see, and what a device, to be successful, must do; but the world struggled a long time with the problem, and that problem was to find something which would stand the intense heat generated and the great force caused by the explosion of the powder in a high power gun, and the backward escape of the resultant gas under the enormous pressure exerted, and this not in one service of the gun, but in many services. The experiments are detailed in the findings. Metallic cups were tried and paper cups. As early as 1858 India rubber was suggested. Its elasticity, it was thought, would afford all that was necessary for a complete automatic obturation, the gas by its expansion 'to seal its own escape.'
>
> Rubber had some success when constructed in rings of varying degrees of suppleness and hard-

ness, and seemed to have settled the problem. But defects subsequently developed and experiments continued for something better and which would fulfill all the conditions. Then soap obturators were tried, and finally Colonel De Bange's invention of tallow and asbestos. If our purpose was speculative, not practical, we might pause to wonder how such substances could produce such results under the conditions to which they are subjected, and by wondering we express in a way the quality of the invention. We are told by the findings of the Court of Claims that a gas check 'is subject to a pressure of from 30,000 to 40,000 pounds per square inch, to very high temperatures, to the effects of corrosive gases, and the effects of rapid and violent shocks.'

We need not, however, dwell longer on the excellence of the invention. The Government has testified to its excellence by using it in the guns intended for the national defense."

This is not a case of substitution of material at all. The Manton patent excludes the idea that Manton thought of the bold and daring conception that a metallic sabot of sufficient size and strength and stiffness to grasp a large cannon projectile could be so applied thereto as to be expanded by the force of the gases, and enter and be retained by the rifling sufficiently to rotate the projectile. He thought of nothing but an impracticable method.

"It is the well settled rule of law that an impracticable prior device not capable of performing the function of a subsequently patented device that is practicable and useful, is no anticipation. *Coffin* v. *Ogden*, 18 Wall. 124; *Clough* v. *Barker*, 106 U. S. 160; 1 Sup. Ct. 188; *Topliff* v. *Topliff*, 145 U. S. 161; 12 Sup. Ct.; *Holloway* v. *Dow*, 54 Fed. 516; Walker on Patents, Sec. 68."

Bowers v. *San Francisco Bridge Co.* 91 Fed. 410.

An unsuccessful device will not be considered an anticipation even though a patent may have been previously obtained for it.

Whitley v. *Swain*, 7 Wall. U. S. 685.
Gormully v. *Stanley*, 90 Fed. 279.

In order that a prior patent may constitute an anticipation it must be taken as it stands, and more may not be added to it by implication than it fairly shows in order to make it represent an operative device.

Farrelly v. *Wirt*, 104 Fed. 1005.
Dashiell v. *Grosvenor*, 162 U. S. 425.
Universal & Co. v. *Willimantic Linen Co.* 82 Fed. 228.
Badische v. *Kalle*, 94 Fed. 163.

COURT OF CLAIMS EXHIBIT A-3, FRENCH PATENT TO DELVIGNE NO. 7175, DATED APRIL 13, 1840.

Not proved. An explosive bullet for small arms and not capable of use in cannon. It shows nothing more than a mere explosive, lined, leaden bullet for small arms adapted to be engaged with the rifling by "foreing" the lead into the grooves through pressure from a ramrod operated by hand. As shown by works of authority describing Delvigne's bullet this forcing of a cut-out part of the body of the projectile against an inclined part of the barrel was the essential idea of engaging the projectile with the grooves and this method was found unsatisfactory because forcing in this manner deformed the body of the projectile and caused it to travel out of true line. It was asserted that the Delvigne bullet has both the wedging and the valvular action of the Woodbridge device. The first action is not even hinted at by Delvigne and could not take place as, with a small leaden bullet having an inner lining or shell of harder metal, the

lead constitutes the heavier body and there could not be that relative inertia between a heavy projectile body and a lighter sabot necessary to produce the initial forward movement of the latter relative to the former, as in Woodbridge *and all the Government infringing* projectiles of the wedging type.

Secondly, it could not function on the principle of the direct expansion or valvular action in the sense that Woodbridge, Parrott, Dahlgren, Stafford and others of the infringing projectiles function, because it does not have the inclined or "reserved" portions exposed to the initial force of explosion, but such parts are seated against the interfitting end of the firing chamber on their inner sides and jammed or forced into the rifling on their outer side, and the aid in forcing given by the explosion as referred to in the specification is merely slight and incidental, and would be of no use in a cannon projectile.

The Delvigne projectile would not function as a rifle projectile except by jamming and deforming the metal of the projectile into the firing chamber and grooves, since if loosely seated on the end of the chamber, it would not present any cup-shaped portion to catch the gases and be expanded at the initial force of the explosion by the pressure of the gases on one side and the resistance of the projectile on the other. It has not a ring extensible in the sense of Woodbridge, but a composite lead and harder metal projectile which moves forward as an entirety under the explosion. It could not be used for cannon and none of the infringing devices or patents covering the same adopted its construction and it was not even practicable for small arms.

"It is not sufficient to constitute an anticipation that the device relied upon might, by modification, be made to accomplish the function performed by the patent in question, if it were not designed by its

maker, not adopted, nor actually used, for the performance of such functions."

Topliff v. *Topliff*, 145 U. S. 161; 36 Law Ed. 661.

COURT OF CLAIMS EXHIBIT A-4, GREENER ON THE SCIENCE OF GUNNERY 1841, P. 297.

This article describes "expansive balls," that is, a ball which is itself composed of a metal capable of being expanded. It is clear that it was intended for and capable of use only in small arms. A leaden ball would, of course, be entirely impracticable for projectiles for ordnance, particularly for explosive shells. Of course, practically all leaden small arms balls of the old muzzle loading type were expanding bullets, that is, either the ramrod or the gases of explosion forced outward the soft lead of the body of the small projectile into the grooves of the rifling. It is clear that, owing to the relatively light weight and small inertia of the projectile, the lead must have been comparatively soft to enable it to be expanded and that a very large portion of the body of the projectile must be hollowed out or thinned to afford a sufficiently large pressure area relative to the thickness to enable sufficient metal to be forced out to engage the grooves. Carrying out these conditions was absolutely impracticable in either hard metal, or in lead shells for ordnance, had the latter been capable of use.

In the said Greener publication, an oval lead ball is described and it is adapted to be expanded by a plug which is driven forward into the ball. It would be impracticable to use this projectile with the plug end forward, as suggested in the Greener publication, owing to the greater inertia of the ball relative to the plug. This construction necessitated the employment of two separate

parts, and was incapable of use in or adaptation to ordnance, and its principle was never so adapted or applied. It did not solve the ordnance problem. There is no extensible ring or sabot separate from the body of the projectile and, of course, no means shown for holding such a ring on the projectile, thus rotating the shell with it.

COURT OF CLAIMS EXHIBIT A-5, HOLDSTOCK MECHANICS MAGAZINE 1843, VOLUME 39, PAGES 38 AND 39.

This projectile is plainly intended for and capable of use in small arms only. It does not have a metallic extensible ring engaging the body of the projectile. It would not be "a practical projectile for large or heavy ordnance." (Decker, Defendants' Expert.) It is not an embodiment of claim 1 of the Woodbridge application.

COURT OF CLAIMS EXHIBIT A-6, ARTISAN OF 1846.

Cited as a reference by the Patent Office. Previously discussed.

COURT OF CLAIMS EXHIBIT A-7, MECHANICS MAGAZINE FOR 1846, VOL. 44, PAGES 439, 440.

This projectile plainly intended for and capable of use in small arms only. It has no metallic extensible ring engaging the body of the projectile. No embodiment of, or limitation of Woodbridge Claim 1.

COURT OF CLAIMS EXHIBIT A-8, FRENCH PATENT TO MOREL No. 2333, AUGUST 17, 1846.

Date of issue and publication not proved. It shows merely a leaden bullet for small arms. Leaden rifle bullets had been used for a long time. Woodbridge refers to the history thereof in his pamphlet.

The problems involved in the successful production of the means for giving the rifle motion to the two kinds of projectiles were vastly different. The small arms projectile was made of lead and was slight in resistance and could be "forced" into engagement with the grooves by a ramrod operated by hand.

The cannon or ordnance projectiles were made of cast iron and weighed from three pounds to a thousand pounds, and were subjected to enormous pressures. The solution of the problem as applied to ordnance depended not on suggesting on paper the advisability of applying the principle or the possibility of using the small arms projectile, but of showing, describing and demonstrating *how* to do it practically.

As to this Morel device, Mr. Cameron, plaintiff's expert, says:

> "This patent discloses not a ring of soft metal on a hard metal projectile, as in the Woodbridge invention, but rather a projectile which is itself composed of soft metal, as lead. There is no 'sabot' or ring of any kind whatever. The soft-metal projectile is provided with a central conical depression in its base, and when the projectile is placed in the gun the projectile itself is expanded by the action of ramming the projectile home, which action would itself deform the projectile and interfere with the accuracy of its flight. In addition to this, the action of the gases of discharge would possibly expand the rear portion of the projectile itself into more intimate contact with the bore of the gun.
>
> Comparing this with the Woodbridge invention, I do not find 'an extensible metallic ring or sabot' of any kind, and, therefore, do not find the first element defined by Mr. Woodbridge in claim 1 of his specification. Such being the case, I find that Morel failed to teach the world what Woodbridge taught the world, to wit, how to prevent windage and center a hard-metal projectile in the bore of a gun, and, if the latter is rifled, impart the rifling motion to the

projectile by the expansion of a soft-metal ring or 'sabot' under the force of the gases of discharge. Like the disclosure of the Mayer application and the Artizan article, Morel failed to disclose the same underlying principle * * * of expansion of the 'sabot' of soft metal on a projectile of hard metal such as cast iron.

Furthermore, I fail to find that Morel's patent makes any suggestion of preventing windage by the use of his projectile.

I quite agree with defendant's expert, Mr. Decker, when he says that he does not think that a projectile of the form shown would be practical in large ordnance. And I also agree with him in his statement that the disclosure of the Morel patent does not show an extensible ring or 'sabot' placed on the body of a projectile and adapted to be driven forward into the groove of the gun, and that it does not embody the matter of the first claim of the Woodbridge application."

COURT OF CLAIMS EXHIBIT A-9, FRENCH PATENT TO MINIE No. 4066, DATED FEBRUARY 13, 1849.

Not proved. Not the Minie ball of Civil War fame. It shows another bullet for small arms. It has the body of the lead bullet hollowed out for substantially one-half its length, and this hollow portion is occupied by a wedge or plug which by the gases of explosion forces the lead of the bullet itself into the rifle grooves. It is thus exactly the opposite of the Woodbridge device and the latter's successors in the field of ordnance, in its action.

COURT OF CLAIMS EXHIBIT A-10, MAYER REJECTED APPLICATION.

Subsequent to Woodbridge. Cited as a reference to Woodbridge's application. Previously discussed.

INFRINGEMENT.

The Court of Claims' description of the Government projectiles as set forth in the appendix to Finding XII is so clear and demonstrates so unquestionably that each embodies the extensible metallic ring or sabot for closing the bore and causing the projectile to travel in the direction of the axis of the bore, and, when used in a rifled gun, adapted by such expansion to engage the rifle grooves, that plaintiffs desire to add nothing to such exposition. If and when such projectiles are used in a smooth bore gun, as they may, and to some extent were, they infringe, upon the court's own theory of the Woodbridge patent.

SUMMARY.

1. Woodbridge was the first to make the use of elongated projectiles in cannon successful, and the defendant has shown nothing to the contrary.

2. He was the first, so far as the record shows, to successfully give the rifle motion to cannon projectiles and, subordinately and conjointly, to close the bore against windage and center the projectile.

The Manton patent is the only reference cited to this point, and that was an impractical suggestion in a patent dated 1792, and admitted to be impracticable by defendant's expert.

3. He was the pioneer in the successful creation or application of the "expansion" principle to cannon projectiles. His claim does not cover merely the general result or principle of giving the rifle motion to projectiles for ordnance or closing off the windage, or centering the projectile, but a definite concrete construction functioning on the principle of expansion. The Government was free to use the compression and mere centering types.

4. His invention, consisting of an extensible metallic ring or sabot applied to the rear of a hard projectile ordnance was of a pioneer character and entitled to a broad interpretation, and not merely so interpreted by plaintiffs' experts but so recognized by General Benet, Admiral O'Neil and the Patent Office officials who acted on his application.

5. The alleged prior art, proved and unproved, merely demonstrates the recognition of the desirability of the result achieved by Woodbridge, and represent vain suggestions and gropings toward the goal so successfully

and brilliantly attained by him. Even after its demonstration in 1850, the ordnance officers were so skeptical of this radical innovation that they would not recommend its adoption, without further trials. Yet all these officers and the Patent Office were familiar with the principle of engaging the rifle grooves by the leaden body of small arms bullets, and also with the Manton projectile.

6. Though confined to an expansion type of device for closing the bore, centering and rotating, the Woodbridge invention, as defined in claim 1, was not limited to the specific embodiment which he illustrated as one form of the invention and specifically not to the groove, inner lip, outer lip or projections, none of which were necessary to the functioning of the "extensible metallic ring or sabot" either by anything in the prior art, or by the terms of his claim or by amendment.

7. Each of the projectiles used by the Government has the "metallic expanding band" or sabot. Each has been proved to infringe by the testimony of two competent experts. Infringement has been conceded by the Patent Office officials, and by General Benet, Admiral O'Neil and even by defendant's expert, when the claim is construed coextensively with its language.

8. The value of the invention should ge governed by the benefit conferred by the invention. So far as the record shows, the invention was the only means of giving ordnance projectiles the rifle motion and closing the bore against windage, and "some means of giving the rifle motion to elongated projectiles is indispensable," and elongated cannon projectiles were indispensable in the successful prosecution of the Civil War. The "reasonable compensation" now awarded in patent infringement cases (*Dowagiac Mfg. Co.* v. *Moline Plow Co.* 235 U. S. 641, 35 Sup. Ct. 221, 59 L. Ed. 398), should be gov-

erned here by the high importance of the invention at a critical period of the Nation's history.

9. Woodbridge made known and demonstrated his invention to the Government with a view to its adoption. It was successful in trials.

10. There is no evidence in the record that Woodbridge acquiesced in the use of his invention by the Government or anyone else between the date of his application and his request for its issue. Nor is there any evidence of any public or other use at all.

He promptly asked for the issue of his patent when there appeared to be another chance of its trial and adoption. There were not intervening rights.

11. In all the cases respecting abandonment of the invention relied on by the Court of Claims there was either an element of concealment of the invention, or facts tending to show that the patentee abandoned his intention to make the invention accessible to the public and available for its needs. None of them are like the present case where the inventor demonstrated his invention to the Government and made it available for adoption soon after the date of his invention and persistently sought new trials of it and published it to the world. The Findings of Fact do not disclose a single fact supporting intention to abandon the invention or right to a patent. They merely show lapse of time in taking out the patent on his application.

The Government was put in possession in 1850 and again in 1852 of all the facts necessary to avail itself of the invention and to recognize the inventor's rights. It deliberately refused to do so and then either deliberately or with blind negligence appropriated his invention, with constructive and actual knowledge of his inventorship.

12. The Findings do not set forth a single fact, nor

does the opinion, indicating intention to abandon his application. There was no time limit and he had a right to rely upon the contract expressed by the Commissioner to retain his application. If a different rule subsequently arose in the office, applicable to the application, then it was the Commissioner's power and duty alone to enforce it.

13. Woodbridge's reasons for retention were legitimate, and his course the natural and proper course for a prudent man vigilant of his patent property, to pursue, to avoid wastage of his patent while his only possible customer was refusing to join with him in making his invention available to the country and "pecuniarily available" to him.

14. Infringement is in effect admitted by the Finding of the Court, coupled with a proper construction of claim 1, or even with the court's limiting interpretation thereof.

The Act of Congress was intended to remedy a grave injustice to an inventor who made a most valuable contribution to the art of implements of warfare and which proved of vast importance in saving the existence of the Government during the Civil War.

It is believed that the judgment of the Court of Claims should be reversed.

Respectfully submitted,

HENRY P. DOOLITTLE,
Attorney for Plaintiffs.

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Ex parte Woodbridge. Dec. Comm of Patents, 1879-p 30... 13.

In the Supreme Court of the United States.

SAMUEL HOMER WOODBRIDGE AND EDWARD WOODBRIDGE BARNES, executors of WILLIAM E. WOODBRIDGE, deceased, appellants,

v.

THE UNITED STATES.

No. 51.

APPEAL FROM THE COURT OF CLAIMS.

BRIEF ON BEHALF OF APPELLEE.

Appellant's brief is so largely made up of references to evidence and allegations of fact that are not in the Findings of Fact which have gone up from the Court below, and, in some cases, as appears from the brief itself, not even before the lower court, and the arguments offered are thus so based on a commingling of found and unfound facts that appellee finds it difficult to reply without a laborious and lengthy separation of matters of alleged fact which are, from those which are not, before this Court. To point out these numerous departures from the Findings of Fact would unduly expand this brief. Happily, it is not necessary, for the facts found by the Court are few and simple, and fully adequate to

dispose of the legal questions involved, which only are here for review.

The "Statement of the Case" by appellant's brief is excepted to for its inclusion of facts that are not "found" by the Court below, and its statement of mere conclusions of counsel from those facts. A brief outline of the case is as follows:

STATEMENT OF THE CASE.

This is an appeal from a decision of the Court of Claims dismissing a petition filed by the executors of William E. Woodbridge for compensation for the use by the United States of an invention, application for which was filed the 11th day of February, 1852, but upon which application letters-patent never issued.

The case comes before this Court for ruling on the question of abandonment after five successive tribunals have unanimously decided that issue against appellant. He has been held to have abandoned his invention by the Examiner in the Patent Office, on appeal by the Board of Examiners in Chief, on second appeal by the Commissioner of Patents, on third appeal by the Supreme Court of the District of Columbia, and now on full trial of the issue under a special jurisdictional Act, by the Court of Claims.

THE JURISDICTIONAL ACT.

The jurisdiction of the Court of Claims, and necessarily this Court on appeal, was invoked by reason of a joint resolution of the Senate and the

House of Representatives of the United States, which is on pages 1 and 2 of the Record.

It is, of course, apparent that the proviso, "*Provided, however*, That the said Court shall *first* be satisfied that the said Woodbridge did not forfeit or abandon his right to a patent, by publication, delay, laches, or otherwise, and that the said patent was wrongfully refused to be issued by the Patent Office," makes it the duty of the Court of Claims to decide the questions enumerated, or as the Court in its opinion (Tr. p. 26) states:

> The provision is, in effect, a condition precedent to the plaintiff's right of recovery.

And further, on the same page, the Court states:

> When, however, Congress in a mandatory provision of the jurisdictional act enjoins a positive condition precedent, a preliminary requirement which must be met before further substantive proceedings may go on, it is a legislative burden cast upon the plaintiffs to meet.

Plaintiffs then must establish to the satisfaction of the Court of Claims that Woodbridge did not forfeit or abandon his right to a patent by publication, delay, laches, or otherwise; and that the said patent was wrongfully refused to be issued by the Patent Office. Failure to meet these requirements must result in a decision against the plaintiffs' claim.

The Court of Claims, in making its findings of fact, nowhere found, in terms, either that Woodbridge

forfeited or abandoned his right to a patent by publication, delay, laches, or otherwise, or that the patent was rightfully refused by the Patent Office, or as the statutory reference states it in the negative, the Court did not positively make a finding of fact answering the Congressional reference—

> That the said Court shall first be satisfied that the said Woodbridge did not forfeit, or abandon his right to a patent, by publication, delay, laches, or otherwise; and that the said patent was wrongfully refused to be issued by the Patent Office. (Tr. p. 1, 2.)

The Court, however, found (Finding XIV, p. 23) that the United States never used the invention which was the subject of the Woodbridge application:

> *Finding XIV.*—It does not appear that any of the improvements or devices for which letters patent were so ordered to issue to the said William E. Woodbridge were manufactured or used by the United States as alleged by the plaintiffs' petition, in this suit.

Further, the Court of Claims, as the conclusion of law gathered from the circumstances and facts found, held (Tr. p. 23):

> Upon the foregoing findings of fact the Court decides, as a conclusion of law, that the plaintiffs' petition should be, and it is hereby, dismissed. Judgment is rendered in favor of the United States, against the plaintiff, for the cost of printing the record herein,

the amount thereof to be entered by the Chief Clerk and collected by him according to law.

From the failure of the Court to make a positive finding of fact as to abandonment, laches, etc., there arises the almost necessary implication that the Court was not satisfied that Woodbridge had not forfeited or abandoned his right to a patent, and that the Patent Office had not wrongfully refused to issue the patent. Furthermore, the congressional reference having specifically directed an initial inquiry to be made—i. e., the Court to be first satisfied that Woodbridge had not lost his rights—failure of the Court to so find, or its silence upon this fact in its findings, results in a failure of jurisdiction as not being in compliance with the congressional reference upon which its jurisdiction was, of course, dependent. The attention of this Court is directed to the question of whether or not in such a situation appellant has any standing before this Court jurisdictionally. And, further, as to the expediency of this Court remanding the case for a definite finding of fact as to abandonment. Abandonment is a question of fact. (*Kendall* v. *Winsor*, 21 How. 322.)

The attorneys for the United States at the present time did not participate in the trial in the Court of Claims, and feel reluctant to urge a remand for an additional finding in view of over seventy years of delay between the filing of the application in the Patent Office and this hearing.

The ultimate action of the Court of Claims in dismissing the petition inferentially is a denial by that Court of its satisfaction that Woodbridge has not forfeited his right to receive a patent, and also the conclusion is irresistible that the Court of Claims so considered the question, for in its unanimous opinion (Tr. p. 35, lines 13, 14, 15) the following language is used:

> We can not escape the conclusion in view of these facts that Woodbridge abandoned his right to letters patent.

Surely it can not be contended that there remains a scintilla of doubt as to what attitude the Court of Claims assumed with respect to the question of abandonment.

HISTORY OF THE WOODBRIDGE INVENTION.

On February 11, 1852, William E. Woodbridge filed in the United States Patent Office an application for an improvement for rifled ordnance. (Finding of Fact I, Tr. 9.) February 16, 1852, the Patent Office rejected his application and claims as "containing nothing new or patentable." (Finding of Fact I, Tr. 11.)

On February 23, 1852 (same page), Woodbridge replied to the rejection of the Patent Office and sought to distinguish his invention from the inventions cited by the Patent Office. Thereafter, on March 19, 1852 (Tr. 12), the Patent Office, after considering the argument set forth by Woodbridge, suggested two claims, which, in the opinion of the Patent Office, were al-

lowable. Woodbridge thereupon, on March 23, 1852, adopted the claims suggested by the Patent Office and amended his application by a letter reading as follows:

> I return herewith my specification, amended, as I suppose, according to your desire, and also the necessary duplicate drawings. I was informed, in answer to my inquiry, that upon the issue, or order to issue, of a patent, it may be filed in the secret archives of your Office (at the risk of the patentee) for such time as he may desire. I wish to avail myself of this privilege when my patent may issue, in order that my ability to take out a patent in a foreign country may not be affected by the publication of the invention. If it is necessary to specify a particular time during which the patent shall remain in the secret archives, you will please consider one year as the time designated by me. (Finding of Fact I, Rec. p. 13.)

In reply to this communication the Patent Office on April 15, 1852, wrote Woodbridge:

> Your favor of the 13th instant is received. Your application for letters patent for rifled ordnance has been examined, and on the 25th ult. a patent was ordered to issue thereon, and in accordance with your request, the papers were filed among the secret archives of the Office, subject to your direction as to the time of issuing the same. Finding of Fact I (Tr. 13).

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PATENT ACT OF 1836 DEFINED THE RIGHTS OF WOODBRIDGE AT THE TIME OF FILING HIS APPLICATION.

For an understanding of Woodbridge's request that his allowed application be filed in the secret archives of the Patent Office an examination of the patent law at that time is illuminating. The Patent Act of 1836 was the measure of Woodbridge's rights at that date, and the only section of that act in any way suggestive of or permissive of such a practice was Section 8, 5 Stats. 121, which provides:

> * * * But nothing in this act contained shall be construed to deprive an original and true inventor of the right to a patent for his invention, by reason of his having previously taken out letters patent therefor in a foreign country, and the same having been published, at any time within six months next preceding the filing of his specification and drawings. And whenever the applicant shall request it, the patent shall take date from the time of the filing of the specification and drawings, not however exceeding six months prior to the actual issuing of the patent; and on like request, and the payment of the duty herein required, by any applicant, his specification and drawings shall be filed in the secret archives of the Office until he shall furnish the model and the patent to be issued, not exceeding the term of one year, the applicant being entitled to notice of interfering applications.

The last phrase of the statute quoted, reading:

> and on like request and the payment of the duty herein required, by any applicant, his

> specification and drawings shall be filed in the secret archives of the office until he shall furnish the model and the patent to be issued, not exceeding the term of one year, the applicant being entitled to notice of interfering applications

is the only ~~jurisdiction~~ language contained in the Patent Act of 1836 which suggests or allows a filing of an application in the "secret archives," and it is to be noted that such secret filing is only for the purpose of completing the application by the furnishing of a model. It never contemplated any other reason than the one stated—i. e., the secrecy period extending to the doing of an act which completed an otherwise incomplete application and could not be expanded to cover cases other than those mentioned in the act.

The statute applied to pending applications in which nothing remained to be done but the furnishing of a model and the issuance of the patent. The purpose—and the only purpose—of this section was to give to such an application the protection of secrecy for one year, until the applicant furnished a model, which at that time was a statutory prerequisite to the issuance of a patent.

It is not found as a fact by the Court of Claims, but the appellants' petition (par. 3, Tr. p. 2) alleges, "a model was filed representing the invention" on the 11th day of February, 1852; so that there appears out of appellant's own mouth an admission that the only possible basis for the "secret filing"—i. e., the

incompleteness of the application for patent because of no model being filed—did not exist!

Appellants in their brief (bottom p. 18), speaking of the authority of the Commissioner of Patents to sanction or legalize the filing of Woodbridge's application in the secret archives, state:

> Fourth, it was done under authority of law, because of the implied authority of the Commissioner to establish a practice not inconsistent with the statutes and under the general authority of Section 1 of the Patent Act of 1836.

The very terms of Section 1 of the Act of 1836 define the Commissioner of Patents' duties or powers and limit them to "such acts and things touching and respecting the granting and issuing of patents for new and useful discoveries, inventions, and improvements, as are herein provided for, or shall hereafter be, by law, directed to be done and performed, and shall have the charge and custody of all the books, records, papers, models, machines, and all other things belonging to said office." (5 Stat. L. p. 117.)

The only expression concerning the power of the Commissioner is that all of his acts must be in conformity with the law, and it need not be added those acts for which there appears no warrant of law are a nullity.

Again on page 19 of appellants' brief it is contended that though there was no written rule of practice authorizing the Commissioner's act, yet there was

an "unwritten rule," as evidenced by Woodbridge's statement in his letter of 1852, that he had so been informed. It is submitted that it is the statutes concerning patents that are being considered and that rights asserted to flow from unwritten rules of the Patent Office or peculiar practices can have no weight whenever such procedure violates the plain spirit and letter of the statute.

It is deemed quite significant that if, as counsel for appellants suggests, the practice or unwritten rule existed that that is the *only* case, so far as counsel is aware, where any such rule has been suggested.

To summarize this branch of the case, it is submitted that, first, there is no provision of the Act of 1836 that gives warrant for the filing of completed applications in the secret archives of the Patent Office; second, appellants admit in their petition that the Woodbridge application was complete, containing specifications, drawings, and model; and, third, that neither Woodbridge by requesting, nor the then Commissioner of Patents by acquiescing, can lawfully depart from the plain direction of the statute.

WOODBRIDGE'S LONG DELAY.

Nine years eight months and sixteen days after Woodbridge had requested his allowed application be kept secret and had designated one year thereafter as the period of secrecy, and after the Patent Office had so filed his application (Tr. p. 13, Finding I), he, on December 31, 1861, addressed the Commissioner of Patents in a letter suggesting amendments to the

application and requesting the issue of said application if the Patent Office refused his offer of amendment. This letter, fully set forth under Finding of Fact III (Tr. p. 14), forever damns Woodbridge as being guilty of laches in the prosecution of his patent and stands as a bar to any relief in this Court, for, in explanation of the unconscionable period that his application had lain in secrecy in the Patent Office, he states in his letter:

> I have allowed it to remain until the present time, it being only lately that any immediate opportunity of rendering it pecuniarily available has ~~accrued~~ occurred. (Finding III, Tr. 14.)

Thereafter (Finding III, Tr. p. 15) correspondence was exchanged between Woodbridge and the Patent Office, the result of which was that the office finally refused to issue the application as a patent on account of the long delay, resulting in abandonment, and it was suggested that if applicant saw fit an appeal lay to the Board of Examiners in Chief from such decision.

Woodbridge took an appeal to the Board of Examiners in Chief from the decision of the Examiner on April 15, 1862, which tribunal affirmed the ruling of the Examiner as to the abandonment of the application and invention July 10, 1862. (Finding V, Tr. p. 16.)

On January 7, 1871, Woodbridge appealed from the decision of the Board to the Commissioner of Patents, and because of a variety of circumstances this appeal was not heard until February 13, 1879, when the

Board's decision was affirmed upon the ground of abandonment. (Finding V, Tr. p. 16.) (Reported Dec. Commr. Patents, 1879, p. 32.)

Following this decision, Woodbridge on April 9, 1879, appealed from the Commissioner's decision to the Supreme Court of the District of Columbia, which Court on February 28, 1880, affirmed the Commissioner's decision. Twenty-one years after the decision in the Supreme Court in the District of Columbia, to wit, March 2, 1901, Congress referred the case to the Court of Claims, and after the petition was filed, March 7, 1901, appellants closed their case in 1913.

Four years later the appellants filed briefs, and in April, 1918, the case was argued before the Court of Claims—over sixty years after Woodbridge filed his application for patent.

THE WOODBRIDGE INVENTION ABANDONED AS THE RESULT OF LACHES AND DELAY FROM MARCH 25, 1852, TO DECEMBER 31, 1861.

Abandonment has repeatedly been held not to be presumed by mere lapse of time, but must be predicated of either an express declaration by the inventor or from circumstances from which abandonment must necessarily be found. (*Kendall* v. *Winsor*, 62 U. S. 322.) It is within the second phase of abandonment that the application and invention of Woodbridge falls.

Woodbridge had, previous to filing his application in 1852, tested his projectile and was apparently satisfied as to its efficiency. (Tr. p. 17, Finding of

Fact VII.) He had been successful in having the United States test, and its officers had reported to the Ordnance Bureau all information that such tests disclosed (Tr. pp. 17, 18, 19, Finding of Fact VII), so that when he filed his application on February 11, 1852, his invention was complete. When he made the request that the allowed claims in his application be secretly filed in the Patent Office, he gave as a reason that he wished to avail himself of the right to obtain foreign patents. (Tr. p. 13, Finding of Fact I.) Yet Woodbridge never made any attempt to procure foreign patents on his invention. (Tr. p. 21, Finding of Fact VIII.)

Unquestionably his real motive is disclosed in his belated letter to the Commissioner of Patents requesting the issue of the patent over nine years later. (Tr. p. 14, Finding of Fact III.)

> I have allowed it to remain until the present time, it being only lately that any immediate opportunity of rendering it pecuniarily available has occurred.

The Court of Claims (Tr. p. 16), in Finding of Fact IV, amplified this statement of Woodbridge and allows no uncertainty to exist as to his reason for attempting to extend his control over the invention. It was palpably to withhold from the public the advantages of his invention and extend the time within which ordinarily his patent would have expired, by keeping the invention secret in the Patent Office and not issuing it until the profitable use of the invention was assured and a golden harvest be reaped.

In *Macbeth-Evans Glass Co* v. *General Electric Co.*, 246 Fed. Rep. p. 700, the Circuit Court of Appeals for the Sixth Circuit, speaking of the purposes of the Patent Law with respect to the limitation by Congress of its terms, said:

> When a patent expires, the right to practice the invention thus becomes available to everybody. The object of such a limitation and disclosure was to secure to the public the full benefits of patented objects as speedily as was consistent with reasonable stimulation of invention. If then we assume that the course adopted by the present inventor and his assignee did not contemplate an intent to abandon the right to secure a patent, it certainly did contemplate an indefinite delay in disclosure of the invention and a practical and substantial enlargement of any period of monopoly recognized by statute. Can it be doubted that this was opposed to a declared and subsisting public policy?

Such a course of conduct is entirely at variance with the spirit of our patent law, which, as a consideration for the grant of the monopoly, requires a full acceptance by the inventor of the statutory conditions, and, furthermore, the fundamental principle of the grant is that the public gain a right to practice the invention or discovery at the end of a fixed term. This Court, in *Kendall* v. *Winsor*, 21 How. 322, 327, has aptly stated:

> It is undeniably true, that the limited and temporary monopoly granted to inventors

> was never designed for their exclusive profit or advantage; the benefit to the public or community at large was another and doubtless the primary object in granting and securing that monopoly.

The constitutional provision giving rise to all statute law controlling the rights of inventors and the granting of patents expresses the limitation by Congress on the exclusive rights of authors and inventors to their respective property. Article I, Sec. 8:

> The Congress shall have power * * * to promote the progress of science and the useful arts by securing for limited terms to authors and inventors the exclusive right to their respective writings and discoveries.

Under this authority Congress, by the Statute of 1836, denominated fourteen years as the time limitation found in the Constitution over which an inventor had security in his invention or the monopoly. Woodbridge, however, not satisfied with fourteen years of exclusive property, dating from the completion of his invention, sought, by secret filing of his application after allowance of his claims, to extend the period of control over his invention until such time as he—not Congress—might determine. His allowed application containing his invention lay secret in the Patent Office over nine years, a menace to all who in the meantime developed similar devices, and the Court of Claims has found (Tr. p. 22, Finding X), that during this period alone fourteen American patents for improvements in projectiles were issued.

A number of patents covering the types of projectiles for the use of which Woodbridge seeks to receive compensation from the United States were issued during the period between 1852 and 1861. (Tr. p. 40, Exhibit No. 8, Hotchkiss; Exhibits Nos. 9 and 10, Parrott, Tr. pp. 41 and 42; Exhibit 11, Sawyer, Tr. p. 43; and Exhibit 12, Dahlgren, Tr. p. 44.)

Woodbridge was chargeable with notice of the contents of these patents (*Boyden* v. *Burke*, 14 How. 575), yet he stood silent while rights were conferred upon others by their issue.

Also he distributed publicly to Members of Congress and others interested in such matters, and circulated in foreign nations, a pamphlet entitled "A Plan for Increasing the Efficiency of Cannon by Giving the Rifle Motion to Cannon Projectiles," which contained the drawings and a full description of his invention as disclosed in the patent application. (Tr. p. 21, Finding XIII.) This pamphlet did not disclose that a patent for the device was pending or that Woodbridge was the inventor of the device.

In view of the intervening rights of the various patentees of projectiles between 1852 and 1861, and the conduct of Woodbridge, the opinion of this Court in *Kendall* v. *Winsor*, 21 How. 322, 328, 329, is enlightening:

> It is undeniably true that the limited and temporary monopoly granted to inventors

> was never designed for their exclusive profit or advantage; the benefit to the public or community at large was another and doubtless the primary object in granting and securing that monopoly. * * * The rights and interests, whether of the public or of individuals, *can never be made to yield to schemes of selfishness or cupidity;* moreover, that which is once given to or is invested in the public can not be recalled nor taken from them. * * * It is the unquestionable right of every inventor to confer gratuitously the benefits of his ingenuity upon the public, and this he may do either by express declaration or by conduct equally significant with language—such, for instance, as an acquiescence with full knowledge in the use of his invention by others; or he may forfeit his rights as an inventor by a *willful or negligent postponement of his claims, or by an attempt to withhold the benefit of his improvement from the public until a similar or the same improvement should have been made and introduced by others.* Whilst the remuneration of genius and useful ingenuity is a duty incumbent upon the public, the rights and welfare of the community must be fairly dealt with and effectually guarded. *Considerations of individual emolument can never be permitted to operate to the injury of these.* (Italics ours.)

In *Consolidated Fruit Jar Co.* v. *Wright,* 12 Blach. 149, though the facts are not identical with the present case, the following quotation clearly lays down the rule governing Woodbridge's case, page 156:

> If an inventor without substantial reason or excuse abandons the use of his invention and for nine years sleeps on his rights, and in the meantime others in good faith employ their industry, skill, and money in producing the same thing, and give the public the benefit thereof, putting it into extensive use and on sale, such a state of facts not only warrants the inference of abandonment by the first inventor, but it also creates, as between him and the others, the same equity as would arise if such others had gone further and taken out a patent. Whether the device be patented, or has "gone into use without a patent," should make no difference. (*Kendall* v. *Winsor*, 21 How. 322.) This is not because lapse of time, *per se*, deprives an inventor of his right, but because the circumstances giving character to the delay indicate abandonment; and *also because the intervening rights of others make it inequitable that he should thereafter be permitted to assert any such exclusive title to the invention.* (Italics ours.)

Passing for a moment the fact that Woodbridge never yet received a patent for his invention, even patentees may forfeit their rights by conduct.

In *Wyeth* v. *Stone*, 1 Story, 273, 281–282, the Court said:

> In the next place, as to Wyeth's supposed abandonment of his invention to the public, since he obtained his patent, I agree that it is quite competent for a patentee at any time, by overt acts or by express dedication, to abandon or surrender to the public, for their

use, all the rights secured by his patent, if such is his pleasure, clearly and deliberately expressed. So, if for a series of years the patentee acquiesces without objection in the known public use by others of his invention, or stands by and encourages such use, such conduct will afford a very strong presumption of such an actual abandonment or surrender. *A fortiori*, the doctrine will apply to a case where the patentee has *openly encouraged* or silently acquiesced in such use by the very defendants whom he afterwards seeks to prohibit by injunction from any further use; for, in this way, he may not only *mislead them into expenses*, or acts, or contracts, against which they might otherwise have guarded themselves; but *his conduct operates as a surprise, if not as a fraud, upon them.* At all events, if such a defense were not a complete defense at law in a suit for any infringement of the patent, it would certainly furnish a clear and satisfactory ground why a court of equity should not interfere either to grant an injunction, or to protect the patentee, or to give any other relief. This doctrine is fully recognized in *Rundell* v. *Murray* (Jacob's R. 311, 316), and *Saunders* v. *Smith* (3 Mylne & Craig, 711, 728, 730, 735). But if there were no authority on the point, I should not have the slightest difficulty in asserting the doctrine, as found in the very nature and character of the jurisdiction, exercised by courts of equity on this and other analogous subjects.

The facts surrounding Woodbridge's application for patent, the unique attempt made to abandon all

activity looking toward issuance of a patent by the *secret filing*, and at the same time keep in active being all rights incident to a proper course, render the case isolated as to exact precedent, but that this fact should obscure the application of general principles is unthinkable. No excuse can possibly avoid the fact that Woodbridge adopted his procedure without regard to law and solely for his own personal enrichment, and that he forfeited through laches and abandonment rights that, by a simple request to issue in 1852, would have resulted speedily in a patent.

Appellant is in error in his contention that intervening rights may only be based on actual intervening manufacture and public use. In the analogous cases of reissue, involving the doctrine of abandonment or dedication to the public by the issue of a patent of everything which the inventor does not claim as his monopoly, the issue of patents to others while the inventor delays his application for reissue, will create intervening rights in favor of the public with equal force.

In *Clements* v. *Odorless Apparatus Co.*, this Court speaking by Mr. Justice Blatchford, said, after referring to the granting of two patents to inventors other than the patentee in the interval between the grant of the original patent and the application for reissue thereof in suit:

> The foregoing state of facts brings this case within the principles laid down in *Miller* v. *Brass Co.*, 104 U. S. 350; and *James* v. *Camp-*

bell, 104 U. S. 356. * * * The expansions in claims 1 and 3 of the reissue were afterthoughts, developed by the subsequent course of improvement in the Scharf and Frazier patents, and intended to cover matters appearing in those patents and not claimed in the original patent No. 115565. No excuse is given for the delay in applying for the reissue, nor is any actual inadvertence, accident, or mistake shown. The omission to claim subcombinations in the combinations claimed, the existence of such subcombinations being apparent on the face of the original patent, was, in law, on the facts in this case, such a dedication of them, if new, to the public, that a reissue, to cover such subcombinations, in revocation of such dedication, can not be availed of to the prejudice of rights acquired by the public to what is shown in the Scharf and Frazier patents, issued before the reissue was applied for. *Clements* v. *Odorless Excavating Apparatus Co.*, 109 U. S. 641, 649.

In the present case, while Woodbridge's application was lying in the secret archives for over nine years, he published and widely circulated a pamphlet fully describing it (Finding VIII, Tr. 20), but not disclosing "the fact that a patent for said device had been applied for, or who was the inventor of the device." During this period fourteen patents (Tr. 21, 22) were "added to the art." Among these were Hotchkiss, No. 13679, granted October 16, 1855; Sawyer, No. 13799, granted November 13, 1855; Hotchkiss, No. 29272, granted July 24, 1860; Hotch-

kiss, No. 32293, granted May 14, 1861; Dahlgren, No. 32986, granted August 6, 1861; Parrott, No. 33099, granted August 20, 1861; and Parrott, No. 33100, granted August 20, 1861.

These are the very patents the use of which by the defendant is complained of. They are recited, among others, in appellant's petition (Tr. 6); they are identified by the Court below with the devices used by the defendant during the period in suit (see Finding XII, Tr. 23, and Exhibits 1 to 12, following page 24 of the Transcript); and there is very little showing of use by the defendant of any other devices.

The total weight of the projectiles shown in Finding XII is 70,102,905 pounds. Omitting the Dahlgren projectiles, whose quantity the Court could not determine, there are of the Hotchkiss, Parrott, and Sawyer projectiles alone 61,705,962 pounds, or over 88 per cent of the total. On the basis of royalty found by the Court (Finding XII, Tr. 23) to be reasonable, the total amount is $455,668.88, of which some $401,000 would be paid for the use by the defendant of devices patented during the period while Woodbridge's application was lying inactive.

And this use had apparently begun before Woodbridge asked on December 31, 1861, that his long-secret application be granted. In the petition (Tr. 6) the use is alleged in general terms to have been "During the periods from March 25, 1852, to March 25, 1869"; the Court finds (Finding XII, Tr. 23) it

took place "During the period of time from the year 1861 to March 25, 1869"; Woodbridge's letter of December 31, 1861 (Tr. 14), he says it is "only lately that any immediate opportunity of rendering it pecuniarily available has occurred." It is not found as a fact, but intimated in the opinion (Tr. 28) of the Court below, that Woodbridge was stirred into activity by the fact coming to his knowledge that the defendants were at that time actually using the Hotchkiss patent.

Taking it all through, the long failure to perfect his claim, the equally long publication of the invention by pamphlet without claim, the grant of patents in the meantime, the use of which by the defendant is in large part the very foundation of this suit, a use beginning before December 31, 1861, and apparently known to Woodbridge before that time, the principle underlying the decision of this Court in *Clements* v. *Odorless Excavating Apparatus Co.* (*supra*), seems to directly apply.

Indeed, in *Mahn* v. *Harwood*, 112 U. S. 354, 363, this Court held that the subject matter attempted to be covered by a reissue had been dedicated to the public where there had been a delay of nearly four years without any excuse for the delay, without any showing or suggestion in the opinion (or in the record, see *Ex parte Hoiland*, 285 O. G. 391) that any intervening rights had occurred, either by the grant of patents to other parties or by the invention having come into use or otherwise, except by the

long possession by the public of the original patent without the reissued claims. While no doubt the principles in regard to reissue applications laid down in *Miller* v. *The Brass Company*, 104 U. S. 350, and numerous other cases, will not in all respects apply to all cases of alleged dedication or abandonment, there seems little to distinguish them from the present case, wherein the publication by Woodbridge in 1852 of the full description of his invention without any statement of claim to it, was accompanied by a delay of over nine years in making any attempt to render effective his claim founded on his original and secret application.

The *Berliner* and *Selden cases* cited by appellant have no relation to this case. Congress has now fixed short terms for successive actions, and these cases merely hold that constructive abandonment can not follow where the applicant acts within the periods now definitely set by law.

WOODBRIDGE FORFEITED OR ABANDONED HIS RIGHT TO A PATENT BY HIS ACQUIESCENCE FOR NINE YEARS IN THE ADVERSE DECISION OF THE BOARD OF EXAMINERS IN CHIEF RENDERED JULY 10, 1862, AND BY EIGHT YEARS' ADDITIONAL DELAY AFTER FILING HIS APPEAL IN 1871.

After the original delay of nine years Woodbridge wrote to the Commissioner of Patents on December 31, 1861, asking for the issuance of his patent. The request was denied and this denial was, on appeal, affirmed by the Board of Examiners in Chief July 10, 1862, Woodbridge receiving notice in a letter

from the Patent Office dated July 15, 1862 (Tr. p. 16, Finding V). He thereupon had the right of appeal to the Commissioner in person under section 27 of the Act of 1861. Instead of appealing he acquiesced in this adverse decision until January 7, 1871, a period of more than nine years, during which time the Civil War had been fought and the further development of the projectile art was stimulated. He gave no reason whatever for this period of delay. The Court of Claims has found (Tr. p. 22, Finding XI) that during this period of acquiescence twenty-two United States patents in the projectile art were issued. This development of the art was made not through the efforts of Woodbridge but during a time when he was still, so far as the public and inventors at large were concerned, hidden in the Patent Office without any notice or suggestion of Woodbridge's applications or claims.

In the case of *United States Rifle & Cartridge Co.* v. *Whitney Arms Co.*, 118 U. S. 22, 25, the court, speaking of an inventor acquiescing in the adverse decision of a Patent Office tribunal, said:

> An inventor whose application for a patent has been rejected, and who, without substantial reason and excuse, omits for many years to take any step to reinstate or renew it, must be held to have acquiesced in its rejection, and to have abandoned any intention of further prosecuting his claim.

In *Planing Machine Co.* v. *Keith*, 101 U. S. 479, 485, a case having a similar state of facts to the

present one and dealing with the same period of the Patent Law, the court said:

> An inventor *can not, without cause,* hold his application pending during a long period of years, leaving the public uncertain whether he intends ever to prosecute it, and keeping the field of his invention closed against other inventors. It is not unfair to him, after his application for a patent has been rejected, and after he has for many years taken no steps to reinstate it, to renew it, or to appeal, that it should be concluded he has acquiesced in the rejection and abandoned any intention of prosecuting his claim further. Such a conclusion is in accordance with common observation. Especially is this so when, during those years of his inaction, he saw his invention go into common use and neither uttered a word of complaint or remonstrance, nor was stimulated by it to a fresh attempt to obtain a patent. When in reliance upon his supine inaction the public has made use of the result of his ingenuity, and has accommodated its business and its machinery to the improvement, it is not unjust to him to hold that he shall be regarded as having assented to the appropriation, or, in other words, as having abandoned the invention.

Woodbridge waited until January 7, 1871, the last day of his six months' period mentioned in section 35 of the Act of 1870 upon which he relied, before filing his appeal. That his reliance upon it was unfounded is shown in the contemporaneous cases of *Whitney* and *Keith* just considered.

In *Marsh* v. *Commissioner of Patents* (3 Bissell, 322) the applicant Marsh averred that he had never in fact abandoned his invention. The court said:

> We think the simple allegation that he did not abandon his claim to the public is not enough to rebut the presumption arising from this state of facts. It is not necessary to decide whether any satisfactory explanation could be given of so long a delay. It is not furnished in this bill. It is plain that in consequence of the decision in the case of *Sayles* v. *Hapgood* an attempt was afterwards made to recall an abandoned claim. To sustain this bill would be to vitalize many an old, forgotten claim that now lies buried under the rubbish of the Patent Office. We think it is no answer to say that for his invention Marsh ought to have had a patent; because the meaning of that is he ought to have had it, if he, within a reasonable time, and by the methods the law points out, had sought to obtain it.
>
> The 35th section of the patent law of 1870 declares that any person who has an interest in an invention where a patent was order of issue on the payment of the final fee, and who has failed to make payment within six months from the time when it was allowed * * * shall have a right to make an application for a patent the same as in an original application: "*Provided,* That the second application be made within two years after the allowance of the original application." * * * "*And provided further,* That when an application for a patent has been rejected or withdrawn prior to the passage of this act the applicant shall

have six months from the date of such passage to renew his application or to file a new one, and if he omit to do either his application shall be held to have been abandoned."

It is argued that the plaintiff is within the terms of this section, and that the second proviso applies literally to the facts of this case. It is true that the application of the plaintiff for a patent was rejected prior to the passage of the act, and it is insisted that the sequence to this is that the applicant has six months from the date of its passage to renew his application. This is in fact the letter of the proviso, and yet it must be true that it is subject to the implied condition that the applicant has not lost his right to make the application by abandonment or surrender of the same. It could not have been intended to restore what had already been voluntarily given to the public, or what had become the property of the public, by the neglect or refusal for a series of years to prosecute what was originally a valid claim. Here the neglect or refusal had continued for more than eighteen years, and we can not think that the proviso in the 35th section was intended to include a claim so stale as this. It may be admitted that, as stated in the last clause of the 35th section, abandonment is a question of fact, and we hold, notwithstanding the denial and pretexts to the contrary stated, that Marsh did in fact abandon his claim to the public; that such is the necessary conclusion from the allegations contained in the bill.

But Woodbridge's negligence did not end with his appeal to the Commissioner in 1871. Hearing on this appeal was set for February 14, 1871, and notice thereof was mailed to Woodbridge at Perth Amboy, New Jersey, his former address, but did not reach him. A few weeks later, learning of this fact, he advised the Commissioner that the notice had not reached him. Thereupon another date for hearing was set, which was later found impracticable by the Commissioner, who promised Woodbridge that he would give him another date for hearing. No further action was taken in the matter by either the Patent Office or Woodbridge until January, 1879, when the Patent Office, in response to a request by Woodbridge, notified him that the hearing was set for January 23, 1879. On February 13, 1879, the Commissioner affirmed the decision of the Board of Examiners in Chief refusing Woodbridge's patent upon the ground of abandonment. No reason appears in the findings of fact for the unreasonable delay of Woodbridge between the notice from the Commissioner reaching him in 1871 and the hearing in 1879 save the few weeks intervening between his actual notice and the time of mailing the notice with a faulty address and the inpracticability of the date of the first hearing set by the Commissioner thereafter. It is submitted that this period alone of acquiescence in and of failure to energetically prosecute his appeal from the unfavorable decision of the Board of Examiners in Chief, unexplained as it is, is enough in itself

upon which to predicate abandonment. On April 9, 1879, Woodbridge appealed from the Commissioner's decision to the Supreme Court of the District of Columbia, which court affirmed the Commissioner's decision February 28, 1880, apparently without dissent.

There was a further remedy available to Woodbridge, which was a proceeding under Section 4915 of the Revised Statutes, a bill in equity to compel the issuance of a patent, but he never took advantage of it. Thus we have a period from 1852 to 1879 that Woodbridge allowed his application to drag along in the Patent Office, the public receiving no notice of its presence there, no reason to believe that the field was not open and, as the findings show, active in the same field.

The decisions of the several tribunals which passed upon the merits of Woodbridge's claim are not made a part of the findings of fact of the court, yet the application, drawings, and history of the communications passing between the Patent Office and Woodbridge are a part of the findings and of course constituted the record of facts in all of the tribunals that had unanimously considered and held that Woodbridge had abandoned his rights.

The Court of Claims, in Finding XII, has set forth the number of pounds of projectiles manufactured under patents issued while the Woodbridge invention lay secret, so far as the public was concerned, in the Patent Office. A very significant infer-

ence is drawn because of the comparatively few patents issued for projectiles of the Woodbridge type prior to his letter of December 31, 1861, to the Commissioner asking for the issuance of his patent and the showing made from that date on until 1869. Unquestionably Woodbridge wrote truthfully in his letter of December 31, 1861, wherein he said (Tr. p. 14, Finding III):

> I have allowed it to remain until the present time, it being only lately that any immediate opportunity of rendering it pecuniarily available has occurred.

In view of the above discussion, it is probably unnecessary to consider further the delay that took place between the filing of the appeal on January 7, 1871, and the final hearing of the appeal, eight years after, in February, 1879. The Commissioner may have felt himself justified in paying little attention during this long period to an applicant who was so little insistent on his rights.

During the rolling of the years from March, 1852, to February, 1879, Commissioners of Patents came and went—fifteen of them. Surely there must have been one out of these fifteen men who would have been willing to give the applicant fair treatment, if he had asked for it. During the period from March, 1852, to December 31, 1861, when his application was lying ungranted under the notice from the Commissioner (Tr. 13) that it was "subject to your (Woodbridge's) directions as to the time of issuing the same," seven different Commissioners followed

one after the other. During the period of his delay in entering his appeal to the Commissioner from the adverse decision of the Board, four more Commissioners followed. And during the period when he waited for hearing on his appeal, four more.

> The court will take notice judicially of the persons who from time to time preside over the Patent Office, whether permanently or transiently. *N. Y. & Maryland Line R. R. Co.* v. *Winans*, 17 How. 30, 40.

It is not contended that, in the absence of a statutory bar, setting fixed limits for failing to act during which abandonment will be conclusively presumed, mere delay in itself results in abandonment, but that long delay, not caused by circumstances over which the applicant had no control, such as protracted sickness, extreme poverty, residence during a state of war within the enemy's lines, time necessary to complete the invention, etc., all of which appear in the books and the first two of which are characterized by this Court in the *Planing Machine case* as "these ordinary and accepted reasons for inaction," but caused intentionally, with the invention as complete then as it is now, a delay deliberate and merely for the purpose of postponing the beginning of the monopoly, while numerous other inventions had been patented and the public had become entitled to their benefits, and while for years the very manufacture complained of had been going on to the full knowledge of the

inventor, presents such an overwhelming presumption of intention to abandon and of the inequity of the revival of appellant's claim as we fail to find justified by the action of any court.

THE GOVERNMENT DID NOT INFRINGE THE INVENTION OF WOODBRIDGE.

The question of infringement by the United States of claim 1 of the allowed Woodbridge application is a live question only if the Court of Claims should first "be satisfied that the said Woodbridge did not forfeit or abandon his right to a patent by publication, delay, laches, or otherwise; and that the said patent was wrongfully refused to be issued by the Patent Office."

As previously pointed out, when the Court of Claims dismissed the petition, that action was in effect a determination that Woodbridge had forfeited all rights in his invention, and that the Patent Office had not wrongfully refused to issue to him a patent. That being the result of the Court of Claims' action, a discussion of the question of infringement was perhaps gratuitous by the Court and need not be considered here on appeal. So long, however, as Judge Booth considers the question and a finding is based upon that matter (Tr. p. 23, Finding XIV) it will be briefly discussed.

THE REAL WOODBRIDGE INVENTION.

There is no foundation for the extravagant claim for the Woodbridge invention found at the bottom of

page 16 of appellants' brief. If Woodbridge did these things he did not mention it in his specification and his invention was in no way concerned in the development of the art.

The simple fact is that he was misled in applying small-arms practice to ordnance by the mistakes of previous inventors. He says it has been shown that lead rings would not do for heavy shells (Tr. 12), and he evidently had learned of Manton's success (Tr. p. 19) in experiments with a wooden cup having projections fitting the rifle grooves. These two errors of judgment led him to complete failure.

The Woodbridge invention, stripped of all surplusage usually present in a patent specification, consisted of a hard-metal projectile provided with a soft-metal sabot in the shape of a circular wedge embracing the projectile in the rear of its greatest diameter, the exterior of the sabot having the form of the bore of the gun in which it was to be fired—that is, with projections entering and fitting the grooves of the bore. The sabot was provided with an annular groove at its rear, forming two concentric circular valvular lips to be expanded by the explosive force of the powder against the bore of the gun and the projectile respectively. The valvular lips under the force of the explosive sealed the sabot against the slight space between it and the bore of the gun and prevented windage, windage being a term applied in ballistics to a leakage of the gases of the powder under combustion past the projectile and so disturbing the

true progress of the projectile through the bore of the gun. The applicant, Woodbridge (p. 10, Tr.), states:

> The nature of my invention consists in applying to a projectile to be fired from a rifled gun a rifle-ring, or sabot, in the manner hereinafter described, for the purpose of giving to the projectile the rifle motion.

Again (Tr. p. 10), in describing the operation of his invention (lines 34–42)—

> The surface of the rifle ring exposed to the action of the gases formed by the inflammation of the powder being much greater, in proportion to its inertia, than that of the ball, the ring is driven forcibly forward upon the ball so as to embrace it tightly, and thus impart the rifle motion which itself has received from the grooves of the gun; and at the same time it is stretched to fill the bore of the gun completely, thus destroying the windage and causing the ball to advance strictly in the line of the axis of the bore.

After a rejection by the Patent Office, February 16, 1852, Woodbridge on February 23, 1852, replied by an argument seeking to obviate certain references cited by the Patent Office. Speaking of the sabot (Tr. 12, lines 7–29), it is stated:

> 1st. It is necessarily a ring capable of extension without rupture.
>
> 2nd. It grasps the ball, not in consequence of being attached thereto before its insertion into the gun, but by being driven forcibly

forward upon an enlarged part of the projectile, by the explosion of the powder within the gun, the practical value of which arrangement is that the ring fully retains its grasp on the ball, though the ball does not fully take the rifle motion at the first instant of its progression. Experiments have fully shown that leaden bands can not be made to give the rifle motion to balls of any considerable weight, however strongly attached.

3d. As a necessary result of the stretching of the ring, as above spoken of, it is expanded so as completely to fill the bore of the gun, giving greater accuracy to the coincidence of the motion of the ball with the axis of the bore than would otherwise be obtained.

4th. The valvular portions are important parts of the rifle ring. If the gases are allowed to enter the space between the ring and the ball, the ring is not pressed against the ball so as to grasp it as required, or stretch it against the sides of the bore; if the gases escape between the rifle ring and the sides of the bore, the ring is rapidly abraded by the current of heated gases.

None of these characteristics are indicated, as I am aware, in the article referred to, *and it was my intention to claim nothing else in my specification.*

Upon receipt of this argument and definition of his invention, the Patent Office on March 19, 1852, wrote Woodbridge, suggesting the form of two claims which would be acceptable and allowed; the inventor accepted the claims and they were allowed. (Tr.

p. 13.) By this specific definition of Woodbridge as to his invention he has placed a construction upon it, and the acceptance by the Patent Office of such a construction and the consequent allowance of the suggested claims is a binding limitation upon the inventor forever. Again, after fully describing and indicating by reference to drawings found between pages 10 and 11 of the record, which illustrate a form of sabot with projections and designed to be used only in rifle cannon, the inventor states (Tr. p. 10, last line, and p. 11, lines 1–4):

> I also propose to use a similar ring or sabot (but without the projections for the grooves of the gun) for spherical or other shot in smooth-bore guns, for avoiding the loss of force by windage, and for giving the ball its motion in the direction of the axis of the bore of the gun.

Now, taking all the statements heretofore referred to by the inventor, the specification, claims, and drawings, it is clear that Woodbridge, in order to give the *rifle motion* to a projectile fitted with his sabot, contemplated the use of a sabot with projections which fitted into the grooves of a rifled cannon. No suggestion anywhere appears of a thought that the sabot metal will flow under pressure into the rifle grooves.

He sets forth in his specification (p. 10, line 24) that his invention relates to a sabot "whose exterior surface has the form of the bore, but sufficiently smaller to allow it to be readily introduced into the

gun." To have the form of the bore of a rifle cannon about which the inventor is speaking, the sabot would have to be provided with extensions or projections as indicated at Figure 5, drawing 18, illustrated in the record. The use of sabots in rifled cannon was not the only use the inventor contemplated for his sabot, for when he desired to utilize his sabot in a smoothbore cannon he provided no projections on the sabot, because they would not be needed to prevent windage or for giving the ball or projectile its motion in the direction of the axis of the bore of the gun. (Tr. p. 10, last line; p. 11, lines 1–4.) Nothing can be more apparent in view of the disclosures in his specification that Woodbridge had no thought in 1852 of using a smooth sabot in rifled cannon. This fact is emphasized with great force by his letter of December 31, 1864 (Tr. 14, Finding III), wherein, speaking of the specification as it stood on allowance by the Patent Office in 1852, he says:

> The specification as it is makes no special invention, I believe, of using the ring described without projections in a rifled gun * * *.

Woodbridge here declares in his letter to the Patent Office that the very construction now urged upon the court—that is to say, the use of a smooth sabot in a rifled cannon—was not present in his specification as allowed in 1852, and seeks by an amendment to make "special invention" by the addition of the words "Whether the hinder part of the ring be grooved or not, and without regard to

the form of the bore." (Tr. p. 14, Finding III, lines 36–37.) This and other attempts in this letter to completely wipe out and nullify the self-imposed limitations present in his specification and claims allowed in 1852 comes over nine years later and the conclusion must be that Woodbridge's experience and knowledge of the projectile art during the intervening period led him to suggest this change as well as an admission that change was necessary. He had never prior to that time in any portion of his specification or claims in any way suggested the use of a projectile having a rifle motion imparted to it by the use of a smooth sabot in a smooth bore cannon, for, as he rightfully remarks, the purpose of such sabots in smooth bore cannon was that of "avoiding the loss of force by windage and for giving the ball its motion in the direction of the axis of the bore of the gun." (Tr. p. 13, lines 30–32.)

There is no foundation for the present attempt to show that the projections were made to take into the grooves by the expansion of the ring. Woodbridge was working with muzzle loaders. The ring had to be pushed in from the front and unless the projections were in the grooves always, they were never in. Mordecai's precautions (Tr. 18) in loading show how close the fit was.

THE ALLEGED INFRINGEMENT—DEFENDANT'S STRUCTURES.

We will dismiss in few words the assertion of claim by appellants to compensation for defendant's

shells when used in smoothbore guns. The Act (Tr. 1) referred only to "the claim of William E. Woodbridge for compensation for the use of his alleged invention relating to projectiles for rifled cannon;" the findings of the Court below (Finding XII, Tr. 23) show only the use by defendant of the devices complained of "in *rifled* cannon;" there is no finding whatever that they were ever used in *smoothbore* guns, and all assertions of appellants and references to the evidence and admissions of defendant are founded on matters not before this Court.

For the purpose of review by the Supreme Court, the findings of the Court of Claims "are to be treated like the verdict of a jury" and the Supreme Court is "not at liberty to refer to the evidence, any more than to the opinion, for the purpose of eking out, controlling, or modifying their scope." (*Brothers* v. *United States*, 250 U. S. 88, 93.)

The Government's liability is to be measured by the infringement or use of certain designated types of projectile which the Court of Claims has illustrated in appendix to Finding of Fact XII and designated Exhibits 1 to 12, inclusive. (Tr. between pp. 24 and 25.)

In none of these various types of projectile is there found one which employs a sabot having extensions registering with the grooves in a rifled gun or cannon for the purpose of giving a rifled motion to the projectile. In none is there a sabot which is not so firmly attached to the projectile as to impart to the

projectile at the moment of the explosion of the powder, the rifled motion and not as described by Woodbridge (Tr. p. 12):

> It grasps the ball, not in consequence of being attached thereto before its insertion into the gun, but by being driven forcibly forward upon an enlarged part of the projectile by the explosive of the powder within the gun, the practical value of which arrangement is that the ring fully retains its grasp on the ball, though the ball does not fully take the rifle motion at the first instant of its progression.
>
> Experiments have shown that leaden bands can not be made to give the rifle motion to balls of any considerable weight however strongly attached.

The claimant takes a very different view of his invention when endeavoring to get his patent or distinguishing it from the prior art, from that taken when he considers it with relation to defendant's structures. In the first attitude he points out the entire disconnection of the rifle ring from the shell; in the second he claims that even the Arrick structure, wherein the projectile is entirely and immovably embedded in the soft metal cover, infringes. In the first attitude he insists upon the use of a metal ring capable of extension without rupture; in the second he holds that devices, the metal of which is ruptured and caused to flow under pressure, a thought he never suggested, are infringements.

THE FAILURE OF THE WOODBRIDGE INVENTION.

There must have been some reason for the failure of the Woodbridge invention while so many others succeeded. The reasons sufficiently appear in the reports of the Army officers who tested it in 1850 (Tr. pp. 17–20), which need no elaboration here. We believe that in 1850 only three rounds were ever fired of this invention when trouble developed. Since then it has never been used.

It is submitted that in view of the prior inventions cited against the application of Woodbridge in 1852 his subsequent limitation of his invention as before shown, the prior art listed on page 21 of the transcript, and the finding of the Court as to what the United States used, no infringement of the invention of Woodbridge can be possibly found.

The judgment of the Court of Claims should be affirmed.

Respectfully submitted.

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OCTOBER, 1923.

○

WOODBRIDGE ET AL., EXECUTORS OF WOODBRIDGE, *v.* UNITED STATES.

APPEAL FROM THE COURT OF CLAIMS.

No. 51. Argued October 5, 8, 1923.—Decided November 12, 1923.

1. Any practice of an inventor and applicant for patent through which he, deliberately and without excuse, postpones the beginning of the term of his monopoly, and thus puts off the free public enjoyment of the invention, is an evasion of the patent law and defeats its aim. P. 55.
2. An inventor of projectiles for rifled cannon having obtained allowance of a patent from the Patent Office, procured the papers to be filed in the secret archives on a statement that he wished this for one year only as an aid in obtaining patent rights abroad, and thereafter for nearly ten years deliberately abstained from requesting issuance of his patent in order to postpone the beginning of the patent monopoly until the needs of the Government for the invention should render it of pecuniary value to himself—*Held*, that he forfeited his right to the patent, within the meaning of the special act of Congress authorizing this suit, and therefore compensation could not be recovered from the Government even if it used the invention within the period defined by that statute. Act of March 2, 1901, 31 Stat. 1788. Pp. 56, 59.

55 Ct. Clms. 234, affirmed.

APPEAL from a judgment of the Court of Claims rejecting a claim preferred under a special act of Congress, for compensation for use by the Government of an invention made by the plaintiffs' decedent.

Mr. Henry P. Doolittle for appellants.

Mr. Harry E. Knight, Special Assistant to the Attorney General, with whom *Mr. Solicitor General Beck*, *Mr. Assistant Attorney General Lovett* and *Mr. Melville D. Church*, Special Assistant to the Attorney General, were on the brief, for the United States.

MR. CHIEF JUSTICE TAFT delivered the opinion of the Court.

This suit in the Court of Claims was brought under the authority of a special act of Congress of March 2, 1901, 31 Stat. 1788, by which the claim of William E. Woodbridge, for compensation from the United States for use of his alleged invention relating to projectiles for rifled cannon, for which a patent was ordered issued by the Government, was referred to the Court of Claims to hear and determine, first, whether Woodbridge was the first and original inventor, and, second, to what extent the United States had used it and the amount of compensation which was due in equity and justice therefor, and if it found that Woodbridge was such inventor, to decide the case as if a patent had issued for seventeen years in 1852, the year in which it had been ordered to issue, with the right of appeal as in other causes—"*Provided, however,* That the said court shall first be satisfied that the said Woodbridge did not forfeit, or abandon, his right to a patent, by publication, delay, laches, or otherwise; and that the said patent was wrongly refused to be issued by the Patent Office." The Court of Claims heard the case, made findings of fact and held that the petition must be dismissed on two grounds, first, that Woodbridge had forfeited or abandoned his right to a patent by his delay or laches, and, second, that the United States had not used his invention.

From the findings of fact, it appears that Woodbridge was a man skilled in the science of projectiles and an inventor of genius and experience. In February, 1852, he filed an application for a patent for an invention which he described as consisting of "applying to a projectile to be fired from a rifled gun a rifle-ring, or sabot, in the manner hereinafter described, for the purpose of giving to the projectile the rifle motion." The Patent Office

advised him that the use of sabots or rings of soft metal applied to iron balls was known for either smooth bore or rifled guns, but after discussion allowed him two claims, the first for a smooth ring for a smooth bore cannon, and the second for a ring with exterior projections to fit into the rifled cannon, for the purpose of diminishing windage, and giving the projectile a motion in direction of the axis of the bore.

In a letter of March 23, 1852, Woodbridge wrote the Patent Commissioner, with the claims amended in the form in which the Patent Office had agreed to allow them, and said:

"I was informed, in answer to my inquiry, that upon the issue, or order to issue, of a patent, it may be filed in the secret archives of your office (at the risk of the patentee) for such time as he may desire. I wish to avail myself of this privilege when my patent may issue, in order that my ability to take out a patent in a foreign country may not be affected by the publication of the invention. If it is necessary to specify a particular time during which the patent shall remain in the secret archives, you will please consider one year as the time designated by me."

To this, on April 15, 1852, the Patent Office answered that a patent had been ordered to issue on his application and, in accordance with his request, the papers were filed among the secret archives of the office, subject to his directions as to the time of issuing them. This was done presumably under § 8 of the Act of July 4, 1836, 5 Stat. 121, which contains the following provision:

"And whenever the applicant shall request it, the patent shall take date from the time of the filing of the specification and drawings, not however exceeding six months prior to the actual issuing of the patent; and on like request, and the payment of the duty herein required, by any applicant, his specification and drawings shall be

filed in the secret archives of the office until he shall furnish the model and the patent be issued, not exceeding the term of one year, the applicant being entitled to notice of interfering applications."

After the filing of the papers in the secret archives before April 15, 1852, nothing was done either by Woodbridge or the Patent Office for nine years and a half, when, on December 31, 1861, Woodbridge wrote to the Commissioner of Patents calling attention to his invention in 1850 and his application for a patent in 1852, the order of the office to issue the patent and the filing of the papers in the secret archives. He said:

"I have allowed it to remain until the present time, it being only lately that any immediate opportunity of rendering it pecuniarily available has occurred."

The fourth finding of the Court of Claims was as follows:

"The reason of said Woodbridge for his delay in requesting issue of the patent allowed him was, as stated by him in communications to the Patent Office, that he thought that course best fitted to enable him to avail himself of the value of the patent, as by procuring delay in the issue of the patent the wants of the Government might demand the invention before the patent should expire, and that as the invention could be made available only by the necessities and action of the Government, he thought the intent of the law that the inventor should have 14 years' exclusive use of his invention could in no other way be so well attained in the case of this particular invention 'as by deferring the issue of the patent to a time when it could be brought into practical use.' "

In the same letter in which Woodbridge asked the issue of the patent he requested that he be permitted to amend his specifications and claims and broaden them so as to cover the use in a rifle of the sabot or ring without the projections to fit in the grooves of the bore. Within five days

the Patent Office replied that the patent would be ordered to issue but that the defects in his specifications could only be cured by a reissue. On January 29th, before a month had elapsed, the Patent Office wrote Woodbridge another letter in answer to his letter of December 31, 1861, in which he was informed that the length of time he had allowed his invention to slumber was a bar to the issue of a patent, that for nearly ten years he had suffered his application to remain locked up not merely beyond the reach of the public but beyond even the cognizance of the examiners and other officers of the department, that meantime many patents had issued for the same invention and yet his only reason for his delay and silence was that he supposed the invention would not prove remunerative until recently. The application was rejected on the ground of abandonment. On April 15, 1862, Woodbridge appealed to the Board of Examiners in Chief and on July 10, 1862, that Board affirmed the action of the examiner. Nothing was done by Woodbridge after this until January 7, 1871, when he appealed to the Commissioner of Patents. A day was set for the hearing. Woodbridge did not get the notice. Another day was set. The Commissioner had to postpone it, and told Woodbridge he would give him another date. Nothing was done by anybody till January, 1879, when on Woodbridge's application the case was heard and the Commissioner affirmed the decision by the subordinate tribunals that the facts amounted to abandonment. Woodbridge appealed to the Supreme Court of the District, which affirmed the Commissioner on February 28, 1880.

The Court of Claims found that Woodbridge was the first and original inventor of the invention involved in the two claims recited above. It also found that the United States had not used the invention. The latter finding as one of fact is attacked on the ground that the question of infringement is a mixed question of law and fact and that

with all the devices used by the United States shown in patents subsequent to Woodbridge, which it is found the United States did use, the question of non-user is really a question of law which should be reviewed here.

The judgment of the Court of Claims was chiefly based on the conclusion of law from the facts found that Woodbridge had forfeited or abandoned his right to a patent by his delay and laches. The court also held that the claims of Woodbridge did not cover the devices the United States used.

The purpose of the clause of the Constitution concerning patents is in terms to promote the progress of science and the useful arts, and the plan adopted by Congress in exercise of the power has been to give one who makes a useful discovery or invention a monopoly in the making, use and vending of it for a limited number of years. Under the Act of February 21, 1793, § 1, 1 Stat. 318, it was for fourteen years. Under the Act of July 4, 1836, § 6, 5 Stat. 117, 119, it was fourteen years, with a right of extension under certain conditions and a proper showing for seven years longer (*idem* § 18, p. 124). Under the Act of March 2, 1861, § 16, 12 Stat. 246, 249, the term was made seventeen years without extension and this has been the term ever since. It was the legislative intention that the term should run from the date of the issue of the patent, and that, at the end of that time, the public might derive from the full specifications required in the application accompanying the patent, knowledge sufficient to enable it freely to make and use the invention. It is true that a patentee is not obliged either to make, use or vend his invention during the period of his monopoly. *Crown Co.* v. *Nye Tool Works*, 261 U. S. 24, 34; *Continental Paper Bag Co.* v. *Eastern Paper Bag Co.*, 210 U. S. 405. Congress relies for the public benefit to be derived from the invention during the monopoly on the natural motive for gain in the patentee to exploit his invention and to make, use

and vend it or its products or to permit others to do so, for profit. The importance in working out the purpose of Congress of keeping the inventor's monopoly within the term for which the patent is granted is thus shown to be capital. Any practice by the inventor and applicant for a patent through which he deliberately and without excuse postpones beyond the date of the actual invention, the beginning of the term of his monopoly, and thus puts off the free public enjoyment of the useful invention, is an evasion of the statute and defeats its benevolent aim.

In this case we have a delay of nine years and a half in securing a patent that might have been had at any time in that period for the asking, and this for the admitted purpose of making the term of the monopoly square with the period when the commercial profit from it would be highest. Not until war or fear of war came was there likely to be a strong demand for rifled cannon and their improvement. Hence, the inventor, having put his order for the issue of a patent into the secret archives of the Patent Office in 1852, sat down and waited until after the Civil War came on in 1861 before seeking to avail himself of the patent, thus postponing the time when the public could freely enjoy it for nearly ten years. Meantime other inventors had been at work in the same field and had obtained patents without knowledge of the situation with respect to Woodbridge's invention. This is not a case where evidence has to be weighed as to the purpose of the inventor. He avows his deliberate intention. This is not a case of abandonment. It is a case of forfeiting the right to a patent by designed delay. The special statute makes it a condition of any jurisdiction of the Court of Claims to render a judgment against the United States that the court shall find that claimant had not forfeited his right to a patent by delay or laches or for other reasons. This necessarily implies that there may be forfeiture by delay or laches,

and this Court has said that there may be such a forfeiture. In *Kendall* v. *Winsor*, 21 How. 322, 329, Mr. Justice Daniel, speaking for the Court, delivered a very clear and forcible opinion on what the inventors who sought patents owed the public. One passage in that opinion is apposite here:

"It is", said the Justice, "the unquestionable right of every inventor to confer gratuitously the benefits of his ingenuity upon the public, and this he may do either by express declaration or by conduct equally significant with language—such, for instance, as an acquiescence with full knowledge in the use of his invention by others; or he may forfeit his rights as an inventor by a wilful or negligent postponement of his claims, or by an attempt to withhold the benefit of his improvement from the public until a similar or the same improvement should have been made and introduced by others."

In the case before us, we have the feature last alluded to. Many inventors were at work in the same field and had made advances in the art and the Government had used them. When Woodbridge conceived that the time for him had come to assert his monopoly, he became aware of the fact that in his specifications and claims, as allowed, he had not covered the real advance made by his unconscious competitors, and that was the use in a rifled gun of a ring or sabot without projections to fit into the rifling of the bore which, because of the softness of the metal of the ring under the heat and pressure, would do so without projections; and so, nine and a half years after his patent had been allowed but not issued, he applied for a change of specifications and claims, so that he might cover the patents of these subsequent inventors.

Reference is made to the custom of the Patent Office in 1852 and its permission and acquiescence in the consignment of Woodbridge's specifications and order for is-

sue of his patent to the secret archives, as an excuse and explanation for his course. But this is no justification. By the terms of his letter directing it to be done, he said he wished to apply for foreign patents and that he would not ask delay for more than a year. Moreover, § 8 of the law of 1836, quoted above, wherein is found the only authority for such a proceeding, limits the possible period of the deposit in the secret archives to one year, for the evident purpose of preparing a model. Here the findings show that the model had been filed before the deposit, and also show that he never applied for a foreign patent. These circumstances only emphasize the truth of his avowal of 1862 that he was deliberately delaying the issue of his patent so that its term and monopoly would reach forward to include nearly ten more years of the future and cover a much more commercially lucrative period than if he had obtained his patent when he might and should have requested it. Thus he would have deprived the public of a decade of free use of the patent which the law intended. It is true that, under the special law authorizing this action, Woodbridge's representatives could not recover compensation from the Government except for the period of seventeen years from 1852. But this feature of the special law is immaterial in considering the jurisdictional question whether by his conduct he forfeited his right to his patent. That must be decided on the facts as they were between 1852 and 1862. Had he taken out his patent in 1852, he would have been entitled to a term of fourteen years with a contingent possibility of an extension for seven years more. With the change of the law in 1861, had he succeeded in his effort on the last day of that year, he would have secured a patent for seventeen years from 1862. To state it in another way, his certain term if he had been diligent and not sought to evade the law, would have expired in 1866. Had he succeeded in his illegal plan

and procured a patent in 1862, his term would have ended in 1879. Part of this unconscionable postponement of the end of his monopoly was due to the change of law in 1861, but nearly ten years, as already said, was the result of his deliberate design.

No case cited to us presents exactly these facts, but the general principles upon which this Court has proceeded in cases of abandonment by conduct and its views of the rights of the public and the purpose of the constitutional authority to grant patents and of Congress in its legislative execution of that purpose, set forth in those cases, leave no doubt of the conclusion we must reach. *Pennock* v. *Dialogue*, 2 Pet. 1; *Wyeth* v. *Stone*, 1 Story, 273, 282; *Shaw* v. *Cooper*, 7 Pet. 292; *Kendall* v. *Winsor*, 21 How. 322, 329; *Planing-Machine Co.* v. *Keith*, 101 U. S. 479, 485; *United States Rifle & Cartridge Co.* v. *Whitney Arms Co.*, 118 U. S. 22, 25.

Of course the conclusion that patents have been abandoned by conduct in such cases is reached by inference that the delay and other circumstances indicated an intention to give up effort to secure a patent. The circumstances usually relied on to show abandonment are a rejection of an application for a patent by the Patent Office and unexplained delay in prosecuting appeal from one of the several executive tribunals to another provided in the procedure of obtaining a patent. From these intent to abandon is presumed. It is urged that such authorities have no application because intent to abandon can not be inferred from the delay in this case. That is true; but our conclusion rests not on neglect and intention to give up the patent but on a deliberate and unlawful purpose to postpone the term of the patent the inventor always intended to secure.

The case which comes nearer in its facts to this than any other, and is a case of forfeiture rather than abandonment, is that of *Macbeth-Evans Glass Co.* v. *General*

Electric Co., 246 Fed. 695. There, an inventor of a process for making glass used it in secret for nearly ten years, selling the product. At the end of that time when the secret was betrayed by an employee, the inventor applied for a patent. It was held by the Circuit Court of Appeals of the Sixth Circuit, in a most satisfactory opinion by Judge Warrington, that the policy of the patent law to secure to the public the full benefit of inventions after expiration of the fixed term deemed sufficient reasonably to stimulate invention, would be defeated if an inventor could withhold his invention from the public for an indefinite time for his own profit, and that the right to preserve a monopoly in an invention by keeping it a trade secret and the right to secure its protection under the patent laws were inconsistent and could not both be exercised by an inventor. The gist of the reason for the conclusion there was the same as here, that the purpose and result of the conduct of the inventor were unduly to postpone the time when the public could enjoy the free use of the invention.

Mr. Justice Clifford, in *Bates* v. *Coe*, 98 U. S. 31, when considering the validity of a reissued patent, used these words (p. 46):

"Inventors may, if they can, keep their invention secret; and if they do for any length of time, they do not forfeit their right to apply for a patent, unless another in the meantime has made the invention, and secured by patent the exclusive right to make, use, and vend the patented improvement. Within that rule and subject to that condition, inventors may delay to apply for a patent."

And in *Parks* v. *Booth*, 102 U. S. 96, 105, the same Justice said:

"Unless inventors keep their inventions secret they are required to be vigilant in securing patents for their protection."

These remarks were not necessary to the conclusion in the case he was describing, and those in *Bates* v. *Coe* have given some concern to judges having to consider actual cases of deliberate delay. Chief Justice Alvey of the Court of Appeals of the District said of them (*In re Appeal of Mower*, 15 App. D. C. 144, 152, 153):

"This, doubtless, is a correct general proposition; but like all general propositions, it may have its exceptions under special and particular circumstances, even where the intervening rights of third parties have not been secured by patent.

"The patent laws are founded in a large public policy to promote the progress of science and the useful arts. The public, therefore, is a most material party to, and should be duly considered in, every application for a patent, securing to the individual a monopoly for a limited time, in consideration for the exercise of his genius and skill. But the arts and sciences will certainly not be promoted by giving encouragement to inventors to withhold and conceal their inventions for an indefinite time, or to a time when they may use and apply their inventions to their own exclusive advantage, irrespective of the public benefit, and certainly not if the inventor is allowed to conceal his invention to be brought forward in some after time to thwart and defeat a more diligent and active inventor, who has placed the benefit of his invention within the reach and knowledge of the public."

Judge Warrington, in the *Macbeth-Evans Case*, *supra*, refers to the same remarks (246 Fed. 705) as follows:

"We therefore cannot think that the rule laid down in *Pennock* v. *Dialogue* and *Kendall* v. *Winsor* was intended to be qualified by the remarks of Mr. Justice Clifford in *Bates* v. *Coe* . . . We are confirmed in this by the reference made in *Bates* v. *Coe* . . . to the decision in *Pennock* v. *Dialogue* and to the effect of the legislation enacted since, and particularly by the view expressed by

the same justice while sitting on the circuit in *Jones* v. *Sewall*, 3 Cliff. 563, 592, 593—Fed. Cas. No. 7,495 where, in distinguishing between the intent to be inferred from experimental practice of an invention and practice for gain, he said:

"'Such an inference (of intention to surrender the invention to the public) is never favored, nor will it in general be sufficient to prove such a defense, unless it appears that the use, exercise, or practice of the invention was somewhat extensive, and for the purpose of gain, evincing an intent on the part of the inventor to secure the exclusive benefits of his invention without applying for the protection of letters patent.'"

We concur in these explanations and qualifications of Mr. Justice Clifford's general remarks in *Bates* v. *Coe*, and for the reasons given. They certainly should not be construed to militate against our conclusion in this case and the reasons upon which it is founded.

Counsel for the appellants relies chiefly on the cases of *Smith* v. *Goodyear Dental Vulcanite Co.*, 93 U. S. 486; *Colgate* v. *Western Union Telegraph Co.*, 6 Fed. Cases, p. 85, and *United States* v. *American Bell Telephone Co.*, 167 U. S. 224, known as the *Berliner Case*. The first two cases have no bearing on this case. In them, the Court found as a fact that the delays of the inventor in prosecuting his claims in the Patent Office after rejection were not due to an intention to abandon but to his necessitous circumstances. In the *Berliner Case* there was also a question of fact but a different one. The Government charged in that case, as it is charged here, that the Telephone Company, the owner of the invention, deliberately delayed proceedings in the Patent Office for thirteen years in order that, when its main Bell patent expired, the patent for the indispensable Berliner device might overlap and continue the monopoly as a whole. A reading of Mr. Justice Brewer's opinion in that case shows that the at-

tention of the Court was chiefly directed to the issue whether as a fact the delay was due to the design of the owner of the invention or to circumstances over which it had no control, including the rules of the Patent Office, the delays of the examiners, and the peculiar situation as to applications for patents in that active field of invention. The Court found this issue against the Government and in favor of the patentee, whose patent the Government was attempting to cancel for this fraud and could only cancel by clear and convincing proof. In the case at bar, the design of the inventor is disclosed by his own avowal, and his plan of non-action was not in accord with the rules of procedure in the Patent Office but was in plain violation of the statutory law.

The conclusion that Woodbridge forfeited his right to a patent by his delay in taking it from 1852 to 1862 makes it unnecessary for us to consider whether he abandoned it by his wholly unexplained delay of nine more years in prosecuting his appeal from the decision of the Board of Examiners, in July, 1862, to the Commissioner of Patents, until January, 1871. It also relieves us from going into the question whether the Government's use of subsequent patents for improvements in adjusting projectiles for firing from cannon embraced the invention of Woodbridge as contained in his specifications and claims allowed in 1852.

The judgment of the Court of Claims dismissing the petition is

Affirmed.